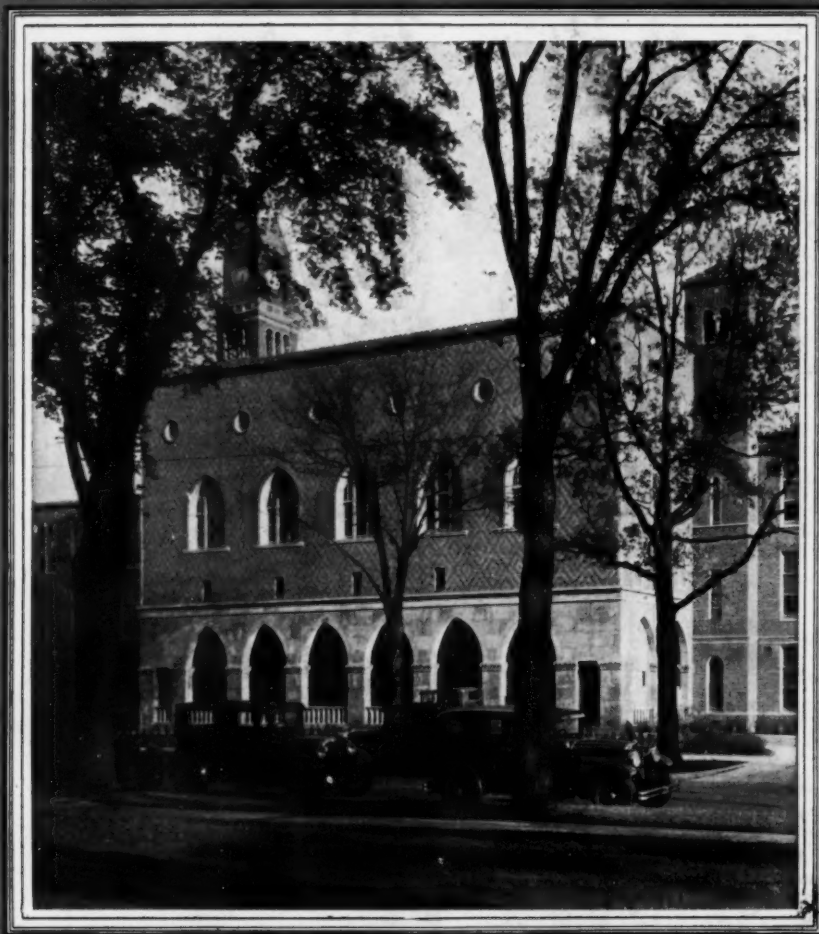


# *The* NATION'S SCHOOLS

DEVOTED TO THE APPLICATION OF  
RESEARCH TO THE BUILDING, EQUIPMENT  
AND ADMINISTRATION OF SCHOOLS

VOL. IV.  
No. 4

OCTOBER  
1929



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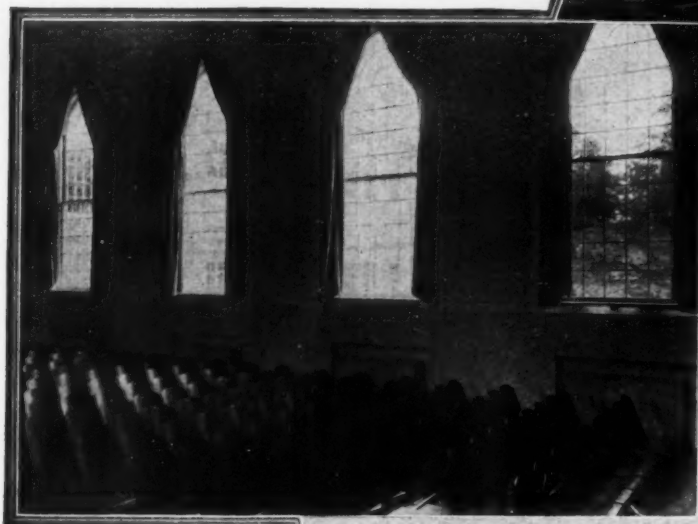




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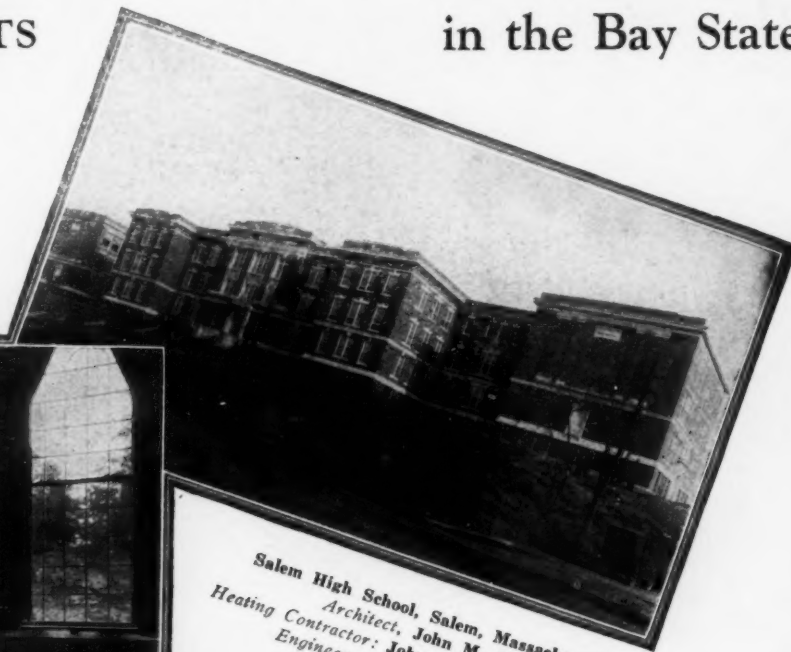
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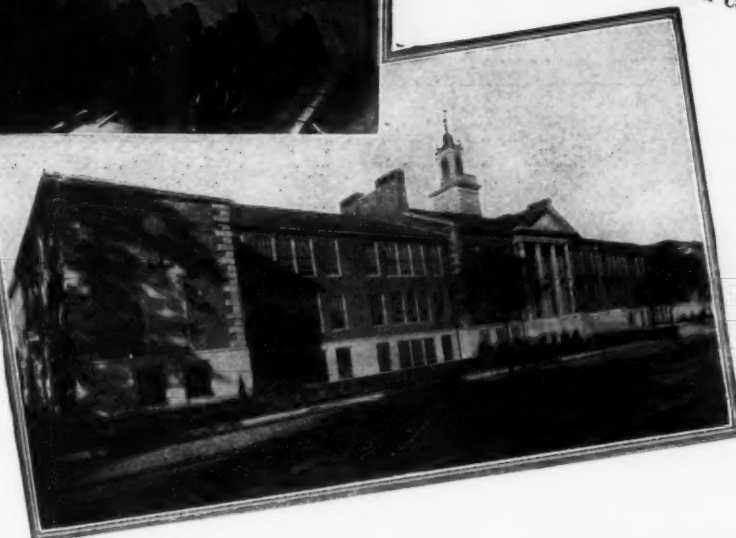
Desmond & Lord  
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Heating Contractor:

V. J. Kenneally & Co.,  
Boston, Mass.



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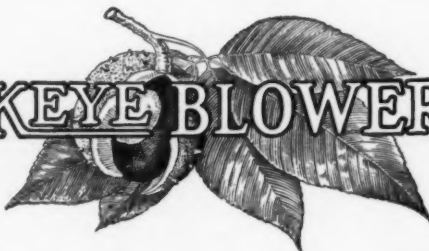
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## THIS MONTH

The importance of well organized teachers' meetings in county school systems is emphasized by Mr. Jaggars in the opening article this month.

Mr. Burr presents an outline of the work accomplished by the research councils in the schools of Lynn, Mass. His article appears on page 25.

Professor O'Shea expresses the belief, on page 42, that teachers have wonderful op-

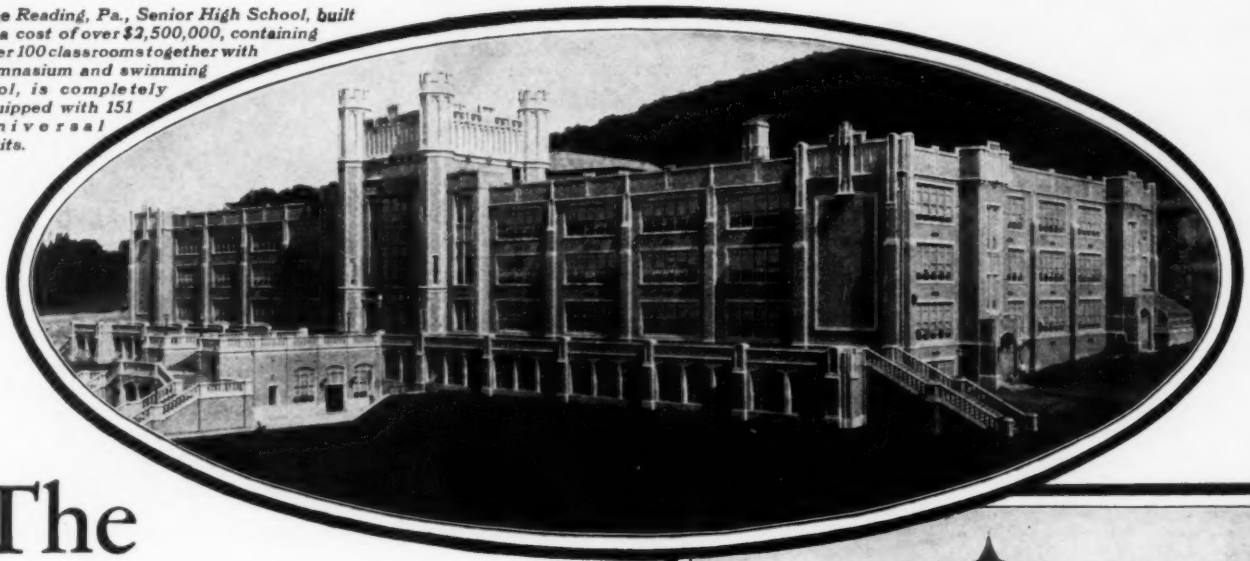
portunities to aid boys and girls by winning their confidence to such an extent that the pupils will be willing to give free expression to their mental difficulties instead of harmfully repressing them.

The seemingly unlimited possibilities that have been opened in the educational field recently through the use of talking motion pictures are described on page 45 by Professor Kitson.

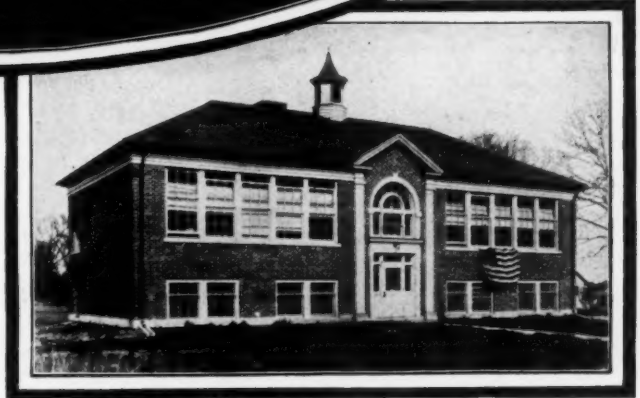
A school designed primarily to meet the needs of elective classes is described on page 59 by Mr. Childs.



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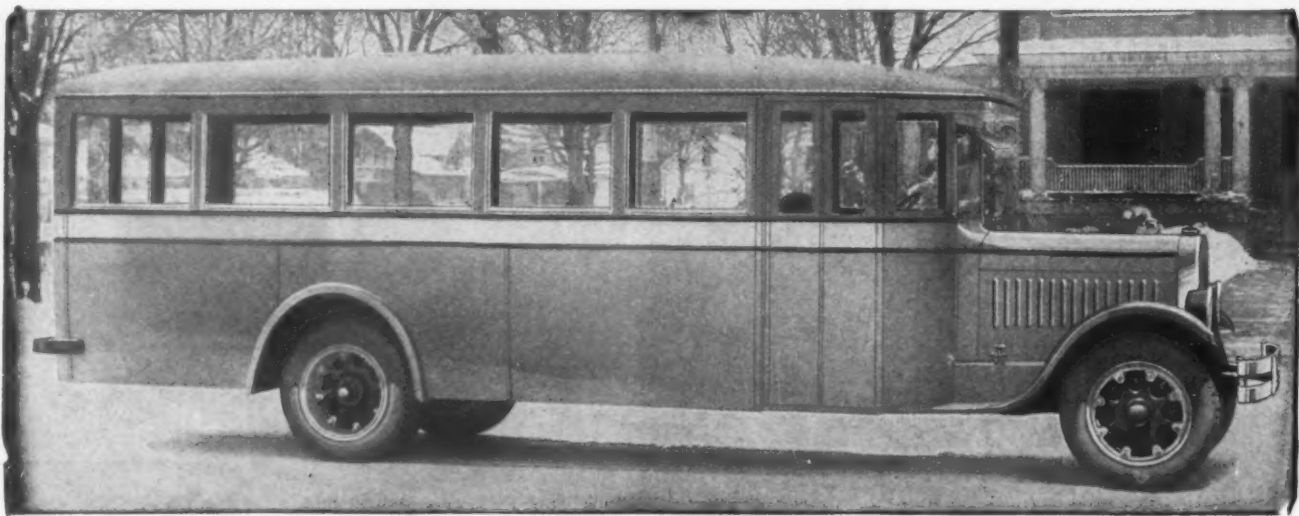
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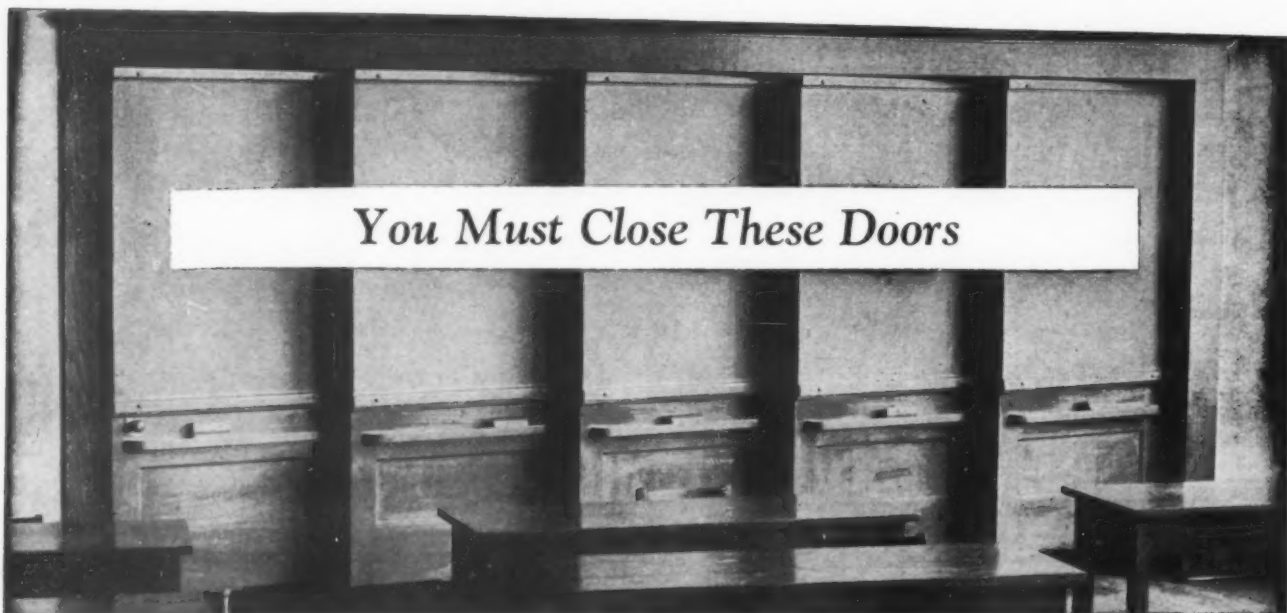
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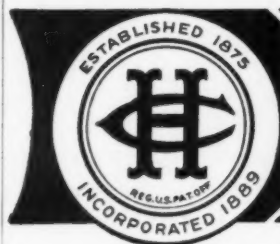
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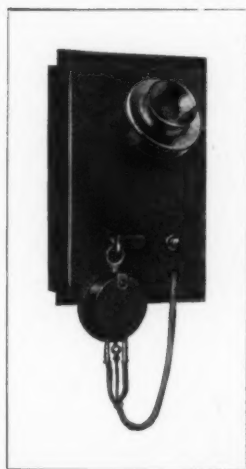
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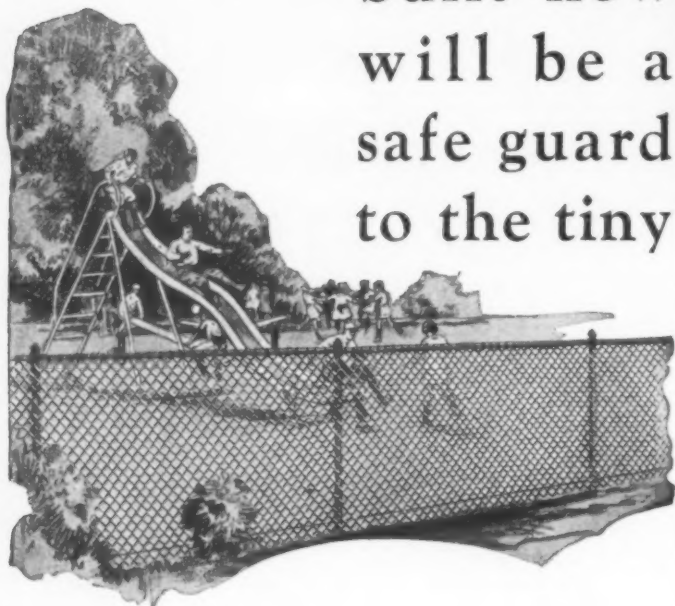
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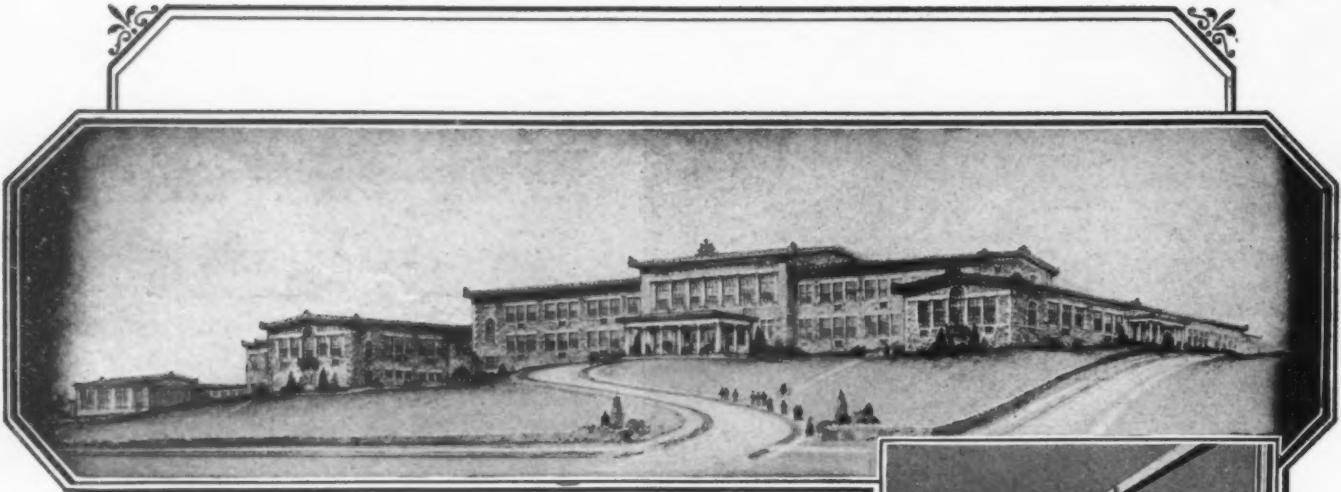
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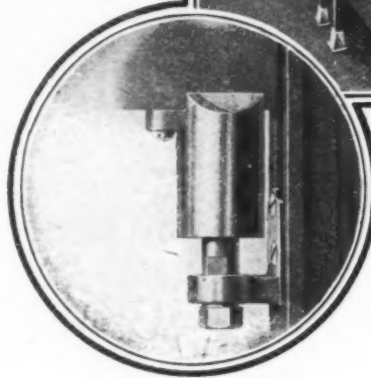
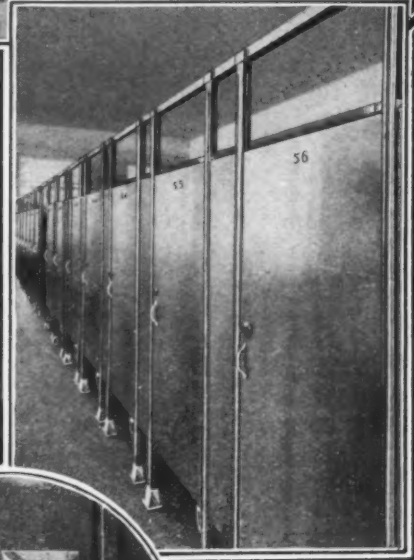
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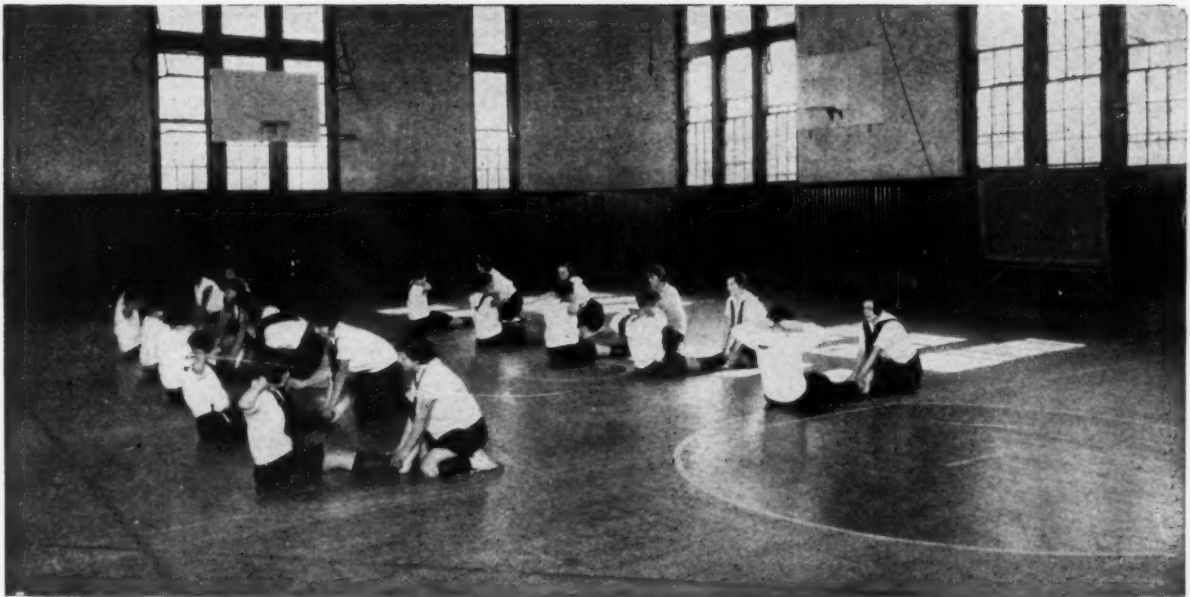
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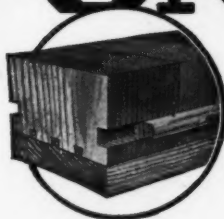
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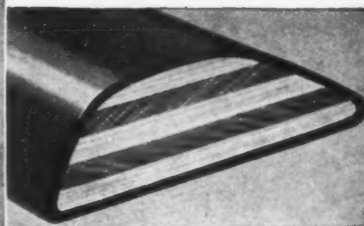


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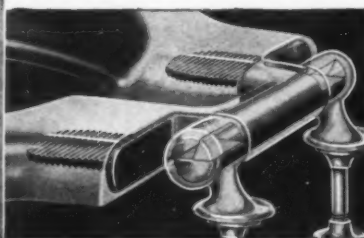
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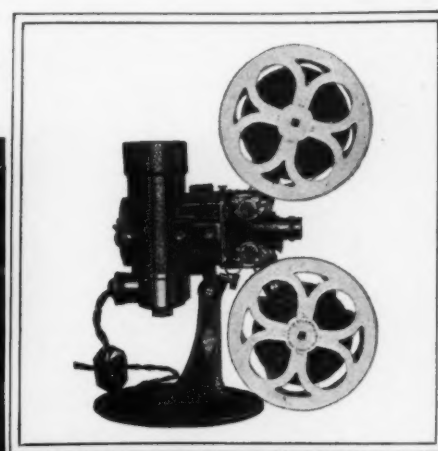
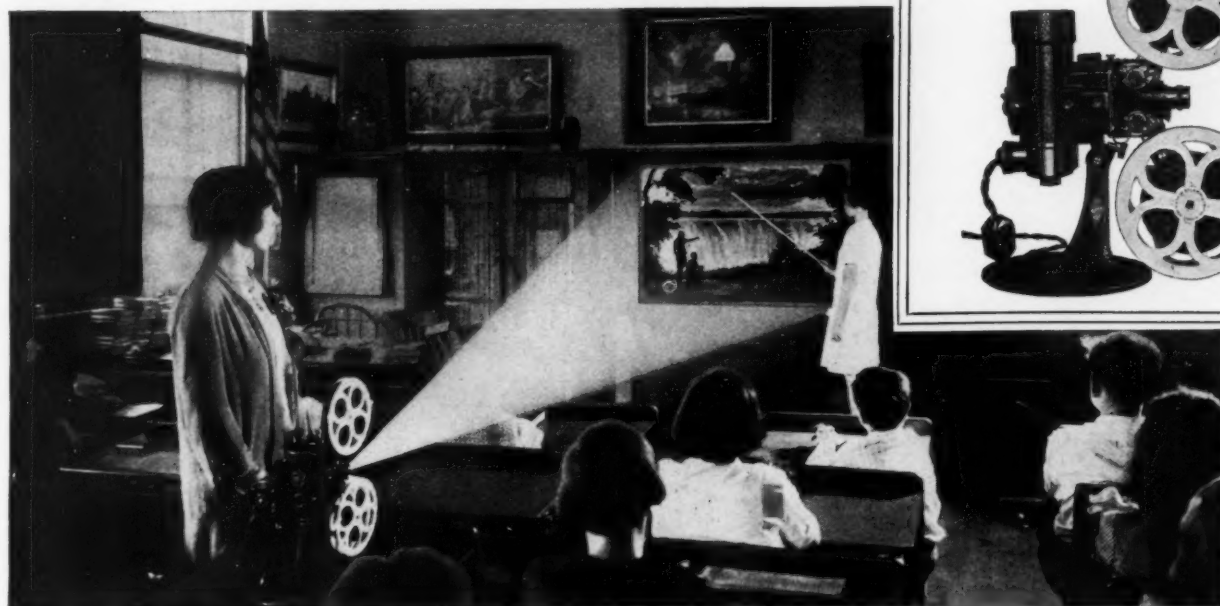
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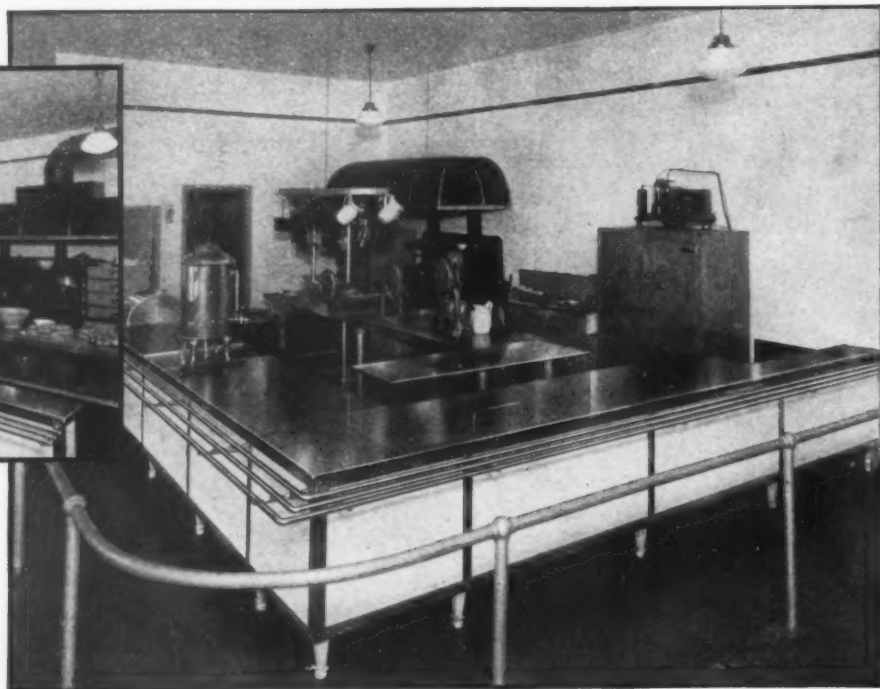
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City.....State.....



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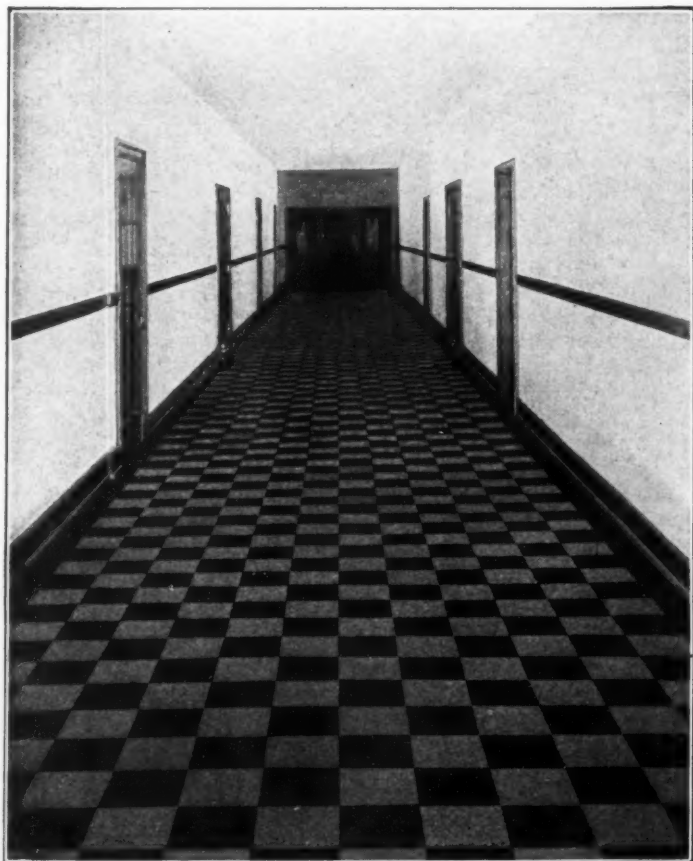
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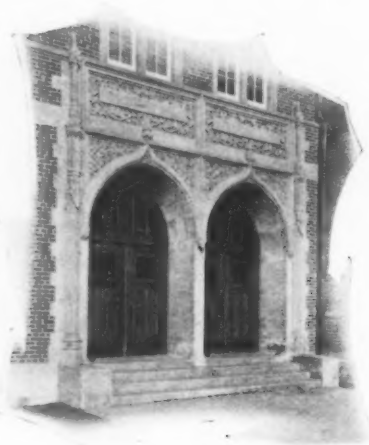
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*A Duraflex Tile installation in the Liverpool High School,  
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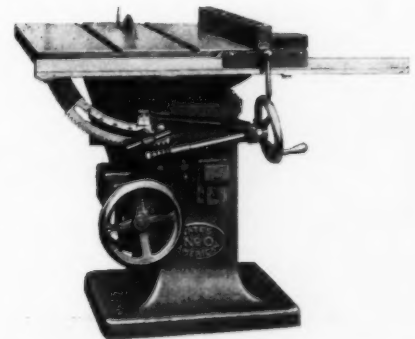
## No. 1 Variety Saw Bench in the Wellington High School



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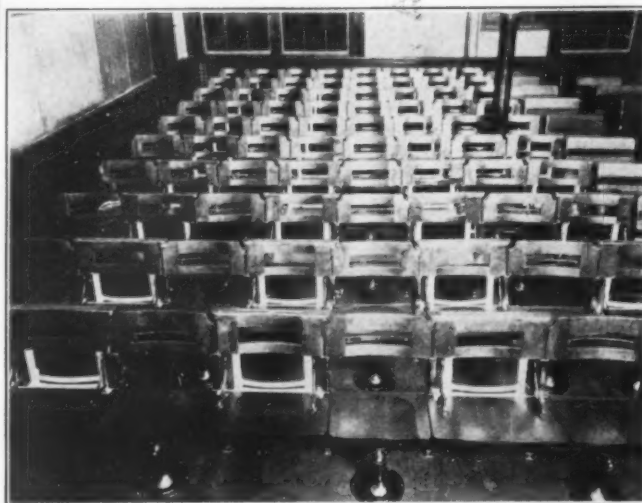


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DEVOTED TO THE APPLICATION OF RESEARCH TO  
THE BUILDING, EQUIPMENT AND ADMINISTRATION OF SCHOOLS

VOLUME IV

OCTOBER, 1929

NUMBER 4

## Organizing Teachers' Meetings in County School Systems

*Teachers' meetings in Kentucky counties are made the basis of a study to show the different types of organization in effect and to illustrate desirable practices*

BY R. E. JAGGERS, SUPERVISOR OF RURAL SCHOOLS, DEPARTMENT OF EDUCATION, FRANKFORT, KY.

SCHOOLS are organized to provide adequate learning conditions for the child. All the money that is spent and all the activities that are performed by those who are connected with the schools help to make possible these conditions. The purpose of supervision is to supply effective leadership in learning, in keeping with the principle of economy with regard to both time and energy. The teachers' meeting is simply one phase of supervision.

The teachers' institute originated in Connecticut in 1839, became firmly established as a part of the public school system by 1870 and was most popular during the period from 1900 to 1910. Since that time it has slowly declined in importance and has gradually changed its purpose. The coming of the teacher-training institutions had much to do with this change.

The institute was abolished by law in Kentucky in 1920. Money was appropriated to establish county normal training schools in different sections of the state. Those counties that did not have the training schools had no substitute for the institute. To meet this condition, the state legislature in 1924 passed an act authorizing county boards of education to call the teachers together for a two-day conference. This conference soon developed a purpose different from that of the institute. The training function of the institute by this time had been taken

over by the normal schools and teachers' colleges. The work of the two-day conference was devoted to organization.

The two-day conference is called in practically all the 120 counties of the state. Only a few counties hold the conference for a longer or shorter period. This meeting is held prior to the opening of the Fall term of school. Its primary purpose is to afford an opportunity for the county superintendent to meet the teachers and to organize them into working units to carry out the program of the year's activities. The meeting is held at the county seat and in most cases is presided over by the county superintendent.

The first order of business usually is to form an organization for the purpose of sequential meetings. This is followed by the presentation of the program of objectives for the year, which is discussed in round-table fashion and finally adopted in definite form. The program that is to be attempted and plans for making it effective constitute the theme of the conference. This includes the discussion of the course of study, extra-class activities and the like. There is usually present at the two-day conference a member of the professional staff of the state department of education or of one of the teacher-training institutions.

The sequential meetings are usually held monthly. These meetings are planned during the



two-day conference. The method of grouping teachers for these meetings differs with the different counties. Probably no two of the 120 counties group their teachers on the same basis. This is due to many factors. Some of the factors that help to determine the basis of groups are: the superintendent's conception of the purpose and function of teachers' meetings; the level of training reached by the superintendent; the training and experience of the teachers; the different types and sizes of schools maintained; the geographical distribution of schools; the size of county and number of schools; road conditions; the number of assistants to the county superintendent; the program of objectives and the number of leaders in the teaching personnel.

The programs of practically all the meetings that succeed the two-day conferences, both countywide and group meetings, are built around the program of objectives. In some instances outside speakers are brought in; in other instances the programs are in charge of some individual or group of individuals from among the teaching force. Probably the most significant feature of the teachers' meetings in Kentucky is their underlying purpose, which is to advance the program of objectives adopted at the two-day conference.

In securing data on teachers' meetings in Kentucky a study was made of fifty unselected counties from all parts of the state. Of these counties 92 per cent hold countywide meetings in addition to the two-day conference, or an average of approximately six meetings. More than a third of these meetings are held on school days or during school hours. In practically 50 per cent of the counties differentiated programs are provided. Ninety-six per cent of all the teachers attend the meetings. Programs are printed in most cases before the meetings either in the newspaper or in bill form. Three different types of organization are here described in some detail in order to illustrate desirable practices. These are actual samples of organizations that are found in Kentucky counties.

#### *1. Organization of teachers' meetings on the basis of geographic groups:*

In a Blue Grass county of Kentucky with an area of probably 300 square miles, there is a teachers' organization that is centered around six small high-school centers in different parts of the county. It is the aim of the county superintendent ultimately to consolidate all the schools in the county at these six centers. The superintendent has a part-time office assistant and no supervisory assistance. Supervision in this

county is effected through teachers' meetings which are supplemented by circular letters on routine matters and by occasional visits by the superintendent. At the two-day teachers' conference held before the school opens the county teachers' club is organized and officers are elected. The teachers are divided into six groups. These range in number from nine to fifteen persons, depending upon the number of teachers in each geographic area. Each group consists of the teachers and principal of the central school and the teachers in the territory served by the high school. The principal is usually the chairman of the division.

#### *Organization of Committees*

The chairman of each division appoints three teachers who, with him, constitute the division committee. These three members divide the remaining teachers into three groups and one member of the division committee becomes the chairman of a group. In this way all the teachers become affiliated with some working unit. The chairman of each division together with the members of his committee becomes a leader responsible for carrying forward some part of the program. The six division chairmen and the chairman of the county teachers' club constitute the county committee which works with the county superintendent in inaugurating and carrying forward different phases and divisions of the program.

At the two-day conference a program of objectives is adopted covering curricular as well as extra-curricular activities. One item in this year's program is a testing program. Seven other major objectives covering all phases of school activities are adopted. In carrying out the program of objectives under this type of organization, each teacher is given a mimeographed plan for the year worked out in considerable detail. All activities, correspondence and meetings point to the achievement of this program. In October meetings are called in each of the six divisions on successive days. All the teachers attend the meetings in their respective divisions. The testing program is planned in detail at each meeting with the whole group assembled. Persons are selected to give the tests. The teachers are then divided into three small conference groups with the leader in charge. Each group discusses ways and means of carrying out the testing program. The actual testing work follows the next week in all the schools as planned.

The November meeting is different from the October meeting. A program for emphasizing some part of the curriculum is planned; there-

fore, only the six division chairmen and their committees meet with the county superintendent. The eighteen members of this meeting return to their respective divisions and start the work as planned. They call their groups together for inaugurating this work. The December meeting takes up a part of the program that directly affects all the teachers; therefore, all the teachers meet at the county seat.

In checking results of the work for the year a meeting is called at the county seat. A score card prepared at the beginning of the year and based on the seven major objectives is evaluated and each teacher gets her rating. The work is measured by this score card on the basis of objectives achieved. A large score board is produced and the ratings are listed. No financial award is made on the basis of achievement.

The superintendent of this county calls his plan "cooperative supervision." It has been in operation for three years with only slight modification.

## II. Departmental organization:

A desirable type of teachers' organization in a county that has consolidated schools as well as one, two and three-teacher schools is the departmental organization. The superintendent of this county calls his organization "long-distance supervision." The county is in Western Kentucky and has an area of about 350 square miles. More than a hundred teachers are employed in the county schools. The superintendent has a full-time office assistant but no supervisory assistance.

At the beginning of the term a two-day conference is held at the county seat. At this conference the work for the year is planned, the teachers are organized into working groups according to their interests—the home economics group, the primary teachers' group, the intermediate teachers' group, the grammar grade and junior high-school teachers' group, the high-school principals' and teachers' group and one-room teachers' group—and committees are selected on extra-class activities such as field day, athletics and literary activities. The county superintendent presides over the two-day conference and directs the work. He is usually assisted by one or more representatives from the professional staff of the state teacher-training institutions or of the state department of education.

Sequential meetings are held at the county seat monthly. The general session consists of reports on the progress of the program and inspirational discussion. Teachers then meet in group sessions, at which time they discuss new plans and neces-

sary changes in old plans. Each group of workers and each committee perform definite work throughout the year. The county superintendent is ex officio chairman of all committees and in this way he is able to preserve unity and coordination in the program of "long-distance supervision."

## III. Teachers' meetings in consolidated counties:

The first county in Kentucky to become completely consolidated is in the northern part of the state and is bordered by the Ohio River. In this county the teachers work in ten consolidated schools and a competent principal is in charge of each school. The superintendent of the county has an office assistant but no supervisory assistance.

Before the opening of the Fall term the county superintendent has individual conferences with all the principals and discusses plans and objectives for the year. Schools are scheduled to open on Tuesday following Labor Day. On Saturday before the opening the teachers and principals meet for a two-hour session at the county seat with the superintendent of the county. Plans for the year are explained by the superintendent. It is made known, also, that the principals are the responsible heads of the schools and that the teachers are responsible to them throughout the year. The county teachers' association is formed with regular officers in charge and a fee of fifty cents is collected. A committee is appointed to prepare programs for the monthly countywide meetings.

### *Annual Faculty Conference*

On Labor Day the principals of the various consolidated schools meet with the teachers at the school buildings. At this faculty conference a tentative organization of the school is made and tentative plans are made for succeeding conferences. Teachers are asked to study the plans during the first week. At the end of the first week the principal in each school meets the teachers again and plans are adopted for organizing the school and for future faculty meetings. The faculty conference is held weekly for the first two months of the term and biweekly thereafter. The first twenty minutes of each conference is devoted to routine matters affecting different phases of the school work. The remaining forty minutes are devoted to professional matters. The conferences are organized on a participation basis: The principal leads the professional discussion about one-fourth of the time while the teachers or a committee of teachers lead the remainder of the time.



The county teachers' association meets monthly at the county seat for a half-day session. The president of the association presides. In approximately one-third of the meetings outside speakers come before the teachers for discussion of professional subjects. The programs at other times are furnished by the teachers in the system. Special studies by the principals and teachers, as well as specialized demonstrations, are presented to the group. The pupils from one of the consolidated schools present the musical part of the program at each meeting. Ten or fifteen minutes of each meeting are given to the superintendent for announcements and routine matters. The programs generally are not differentiated; such programs are left to the individual schools. The main purpose of the county meetings is to maintain professional morale.

These meetings provide the following desirable features: Each member of the teaching profession has a definite responsibility in developing the county program; an opportunity is given for the development of leadership; the school program is a cooperative enterprise; the program of activities is well balanced between curricular and extra-curricular activities; professional morale is maintained; the organizations provide for the things that vitally affect the teacher and time is not consumed in routine matters.

#### *Guiding Principles Listed*

A study of the literature on the organization of teachers' meetings shows that writers are agreed on the guiding principles. The following cautions were discovered in reading twenty articles on the subject: Meetings should be thoroughly planned; teachers should participate in planning the meetings; meetings should be based on the problems of the teachers; teachers should be divided into groups on the basis of common problems; professional literature should be made available to the teachers; meetings should be made concrete and definite; meetings should be in the hands of a competent director; only vitally interested teachers should attend; topics should deal with live issues; the teachers should be notified in advance of the meeting what the discussions will concern; unified educational ideals should be kept always in mind; enough sections should be provided to serve all groups; only enough entertainment should be had to relieve the monotony; specific help on specific problems should be given; the minimum amount of routine matters should be taken up in the meeting; demonstrations should be supplemented by discussion; the meeting should close with a "look ahead."

## Influential Forces in Future Building Programs

That there are many forces and facts that will influence future school building programs is the belief of Joseph Marr Gwinn, superintendent of schools, San Francisco. These are listed by Superintendent Gwinn as follows:

1. Economic pressure which may force a curtailment of the movement to expand education downward to include part of the preschool period and upward to include the junior college and outward to include adult and extension education. Economic pressure may force larger numbers to be taught by one teacher, thereby changing the sizes of schoolrooms, shops and laboratories. It may force the use of platoon and shift devices to decrease the number of school buildings and plants required.

#### *Social Forces Important*

2. Social and psychological forces which urge an expansion of education downward, upward and outward causing the schools to assume new and additional responsibilities once borne by the home, the church, vocation and other agencies and thereby greatly modifying the type of school building required for the new education.

3. Educational research, experimentation and philosophy. These are producing many forces from many different directions and are resulting in a variety of theories and practices which give little sure foundation for future school building programs. Some researchers advocate larger classes, some experimenters favor individual instruction. Some experimenters favor a unified course of study with one teacher for a class of little children while others favor departmentalized instruction with many teachers. The form of the school building will be shaped by the method of teaching that prevails.

#### *Inventions Modify Education*

4. Discoveries and inventions. These have produced tremendous changes in society and will continue increasingly to modify education. Conservatism in education and the lack of social and economic television on the part of many have not permitted the one-room rural school to be replaced by a many roomed building in a much larger school district with a school four or five times as distant in miles yet much closer in time, safety and comfort than the one-room school only one or two miles away. Future school building programs must take into consideration the many new and rapid means of transportation and communication.



# Research Councils and How They Function in One School

*The plan of the public schools of Lynn, Mass., to organize its teachers into small research groups has made the entire personnel active in the work of the research department*

BY SAMUEL ENGLE BURR, DIRECTOR OF RESEARCH, LYNN PUBLIC SCHOOLS, LYNN, MASS.

THE research department of the Lynn, Mass., Public Schools was authorized by the school committee in May, 1927, and began to function shortly afterward. It was not difficult to determine a program for this new department because many important projects presented themselves at once. Testing and measuring, pupil classification and curriculum construction were decided upon as the phases to receive intensive treatment. Half a dozen others were also selected to receive considerable time and attention. Among the latter were publicity, rating of textbooks, preparation of blanks and forms, special inquiries and research in any field of education and the answering of questionnaires.

Testing, classification and curriculum revision were approached from the standpoint that they would mean most if they involved the united efforts of the central staff, the building principals and the classroom teachers. As a result, the

entire personnel of the school system has been involved in these activities sponsored by the research department. During the first year of work in this field, however, it came to be felt that, although the entire personnel of the schools was securing a contact with certain phases of the research work, the majority of the teachers were not being given a very complete idea of what educational research really meant. It seemed that many of them would be justified in forming the idea that educational research and psychological research meant, for them at least, only the marking of test papers, the use of test results and membership in a curriculum construction committee. Thus, in order to bring to the classroom teachers a more complete idea of the full scope of research work, it was decided to advise the formation of small local groups of teachers into local research councils.

As a matter of fact, the classroom teacher in



*Children in class "work" of this kind provide excellent opportunity for research study.*

any educational situation has an ideal research laboratory before her every day. She has presented to her opportunities for educational and psychological research limited only by the amount of time at her disposal, her professional background of facts and experiences, the knowledge that she has of research methods and the extent to which local research work does not militate against the best interests of the children in her room.

When it is considered that there are from four to twenty-two teachers in each local elementary school building and that there are larger groups in the secondary schools, the possibilities for organizing worthwhile research projects seem to be almost limitless.

During the latter part of the school year, 1927-1928, a series of observation and discussion meetings was held for the elementary principals of the Lynn schools. One of the topics brought up for discussion was the usefulness of the teachers' meetings held at the various buildings throughout the school year. The suggestion was made that these meetings should be improved and made of greater professional value. It was this problem of improvement for the building meetings of teachers that made it possible to present to the teachers the idea of organizing research councils. The suggestion being received favorably, the next step was to work out the details of the plan. The director of research conferred with the superintendent regarding these details and later held conferences with the various supervisory officers. All of these staff officers favored the idea and were largely responsible for its success during the first year it was used.

#### *Supervisors Organize Councils*

Due to the fact that many of the elementary school buildings are small in size, have only a few teachers and have a principal who devotes the entire teaching day to a class of pupils, it was decided that the research councils should be organized only by supervising principals who had no teaching duties. In addition to the teachers of their own buildings, these supervising principals would include in their research councils the teachers of the neighboring smaller schools.

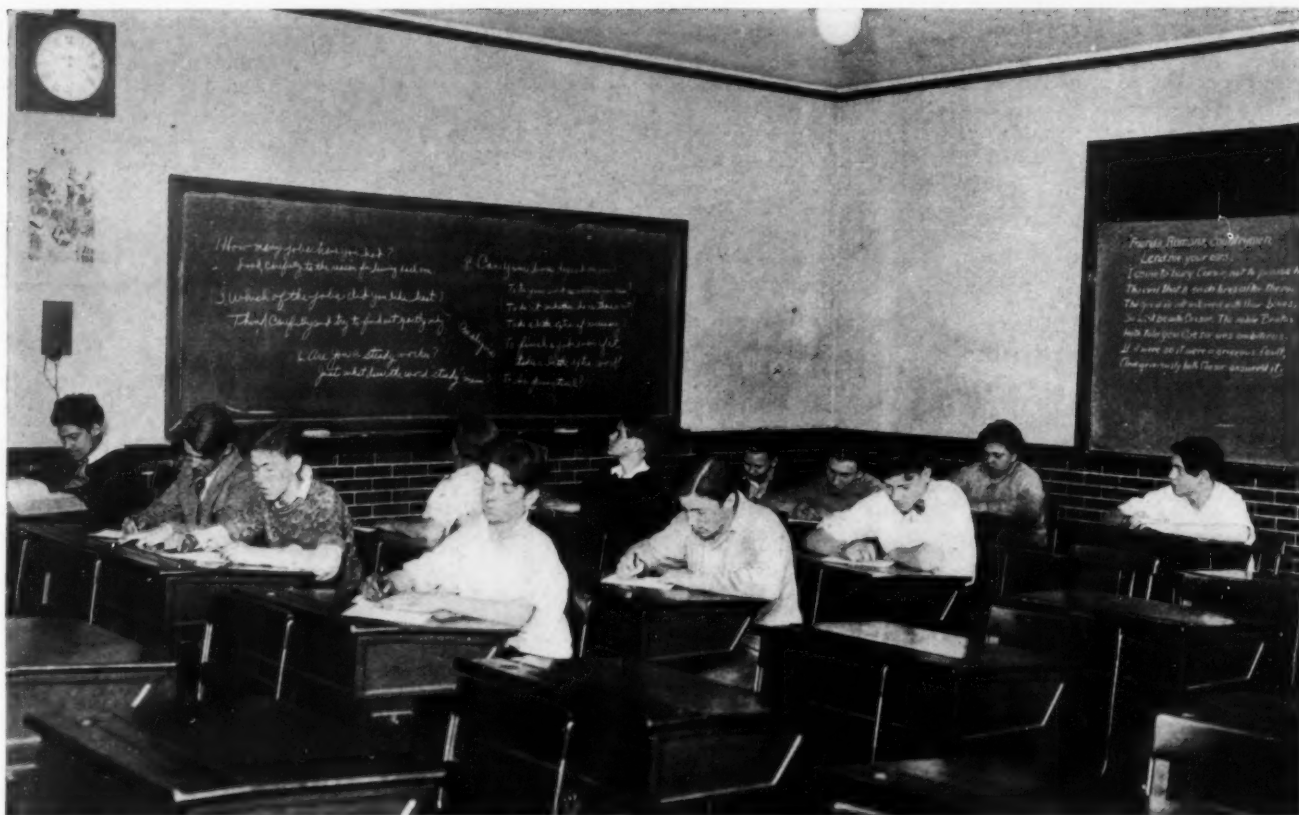
This plan was tried, and experience shows that it does not always succeed. Much depends upon the topic selected. In some cases, the topic is one that has lent itself to study in several different schools and in these cases the plan has succeeded. In other cases, the topic selected did not fit itself to consideration in several different school buildings. As a result of the experience of the past year, in the future the grouping of schools will

depend upon the kind of topic that is considered rather than upon the fact that a school does or does not have a supervising principal.

To give the principals and teachers a concrete idea of the type of material that could be considered in a local research council, a mimeographed bulletin containing the suggested topics was issued in June, 1928. When the bulletin was sent out, it was made clear that these topics did not by any means exhaust the field and that any group could select a topic that was not listed if it found one that was interesting and that was approved by the advisory members. A few of the topics that were given in the bulletin are listed here.

#### *Suggested Topics for Research Councils*

- I. General topics, with director of research as adviser.
  1. A marking system fitted to a school organization using ability grouping.
  2. A diagnostic study of test results, leading to a consideration of various types of remedial teaching, including the work of the coaching teacher.
  3. A study of the relationship between a standardized testing program and a curriculum construction program.
  4. Preparation of local informal tests.
  5. Does sex affect school accomplishment?
- II. Art, with supervisor or assistant supervisor of art as adviser.
  1. The integration of work in the fine arts with work in the academic subjects in building up units of work in an activities program.
  2. Study of methods of conservation of materials and conservation of time in distributing and collecting of material.
  3. How far can instructors go in developing talent in art when it is discovered?
  4. Investigation of the socializing effect of art as applied to community life. Public-school art as a factor in the preparation for citizenship.
- III. Special classes, with school psychologist as adviser.
  1. Adapting the regular curriculum to special class needs.
  2. Forming integrated units of work for special class pupils.
  3. Determining the amount of accomplishment which can be expected of special class pupils.
  4. Developing more definite programs of handwork for pupils in special classes.
  5. The place of visual education in training backward children.



*The research council studied practical guidance work for these boys who attend school one day each week.*

In addition to these, this bulletin contained topics in the following fields: the regular work of the elementary grades, music, physical education, special English classes, illiterate minor classes and continuation-school teachers. It was emphasized that the topics that were listed were merely suggestive and did not by any means limit the field of choice.

In September, the first meetings of the various councils were held and, although the organization of this new work was put upon a voluntary basis, sixteen councils were formed when it was supposed that seventeen would be the maximum number possible. At the first meeting, the topics were chosen and plans were made for getting in touch with the advisers on the central staff. The choice of adviser depended upon the field in which the council expected to work. For example, if the topic chosen was one that dealt particularly in the field of music, then the director of music was invited to become the advisory member of the council. The same was true of other fields of work.

After the adviser had been consulted, and the topic approved by him and by the director of research, the work of the council began and fifteen of the sixteen councils organized carried to a satisfactory conclusion the work they had planned at the beginning of the year.

From time to time during the year, the director of research, acting as the general councilor for all

the research councils, sent out bulletins and questionnaires in order to keep in touch with the work. The answers to these questionnaires indicated the type of advisory work the director of research was called upon to do. A total of six such communications to the chairmen of the councils was sent out and returned to the research department during the year. One of the questionnaires, which was distributed at the end of November, is reprinted here.

#### *To All Elementary Supervising Principals:*

Will you please furnish the information requested below, regarding your local research council? We wish to compare the answers given on this report with those which you submitted in the first research council questionnaire, as a basis for offering whatever suggestions may be useful to you.

1. Name of person reporting.....
2. Have you organized a research council?....
3. What schools are included in your council?  
.....
4. How many teachers are members of your council? .....
5. How many teachers who might belong to your council, because of assignment, did not choose to join in the work this year?.....
6. What is your topic?.....
7. Who is your adviser?.....



8. Has adviser approved topic?.....
9. Do you notify adviser of all meetings?.....
10. How many meetings have you held to date?  
.....  
Give dates, if possible.
11. How often do you plan to meet in the future?  
.....
12. What books, supplies, magazines, etc., do you need now, in order to carry on the work you have planned? .....
13. (a) Are you arranging to secure these yourself? .....
- (b) Is your adviser assisting you in securing them? .....
- (c) Do you expect the director of research to secure them for you?.....
14. Please write any further remarks you care to make on a separate paper and send it to the research department, attached to this questionnaire.

In order to bring the year's work to a satisfactory close, the whole matter of the research councils was discussed at a meeting of the principals held in May. At this meeting, the general purposes of the research council work were reviewed. The topics chosen for study by the various groups were read, and five of the chairmen made individual reports upon the progress of the work they had carried on during the year. These individual reports made by the chairmen of the councils were helpful in showing other principals the possibilities of this type of endeavor and did much to crystallize the determination that such work should continue in the future.

### The Educational System of the New America

Lines of development of the educational system of the new America were predicted by William John Cooper, United States Commissioner of Education, at the recent convention of the National Education Association in Atlanta, Ga., as follows:

First, the extension of scientific methods of objective study and tested thought to all fields of life—social, economic and political—as well as the material in which they have made so much progress in the past generation or two.

Second, that the materials of the natural sciences be used to develop a new method of thinking which will displace the dogmatic type now common even among scientists themselves—“We must avoid the longing to settle things with finality.”

Third, a knowledge on the part of all the peo-

ple as to who the recognized leaders in each field are and why they are leaders, that we may cease to give heed to a politician discussing biology or a manufacturer asserting his views on medicine.

Fourth, a stronger emphasis on real social science designed to enable people to cooperate better for the common good. “This involves also a change in methods of teaching so that pupils will be engaged in a cooperative enterprise in their classwork.”

Fifth, the need for a system of values as effective in all realms of life as the dollar is effective in the world of material things.

Sixth, a plea for individuality in a world which the machine standardization threatens to make as formal as the medieval world or the civilization of the Orient.

### A Good School System Is Good Publicity

“The best medium of publicity for a good school system is a good school system,” R. G. Jones, superintendent of the public schools of Cleveland, believes. “A clean, adequate schoolhouse in an attractive setting serves to advertise a school system better than eight columns of type in the newspaper. Of equal importance with the schoolhouse is the teacher. Teachers who are informed, interesting and competent, and who are liked by the community carry with them in every contact that they make the impression that the school system of which they are a part is sound. Teachers who are unattractive, slovenly, lacking in community spirit and soured on the world affect disadvantageously the public's opinion of the school system.

“Good publicity follows in the wake of good administration. Good administration is for the benefit of the children in the schools and not for the benefit of the administrator. The administrator who wants purely personal publicity for himself is courting disaster.

“Any attempt at suppression is a challenge to the newspaper man, if he is worth his salt. If teachers and principals are forbidden to talk to the reporters, the press naturally will assume that there is something to conceal.”

Superintendent Jones warns against “stunt” and “hullabaloo” publicity. Administrators, he says, may be tempted to use it in a bond issue campaign. It may carry the bond issue, but in the long run the school system can progress only by virtue of an informed, intelligent and even critical public opinion. Such an opinion cannot be built of tricks, he concludes.

# The Computation of Unit Costs in Schools of Higher Education

*The processes of higher education are here subjected to a cost analysis, with suggestions as to the uses and interpretation of the data presented*

By FLOYD W. REEVES, PROFESSOR OF EDUCATION, AND JOHN DALE RUSSELL, ASSOCIATE PROFESSOR OF EDUCATION, UNIVERSITY OF KENTUCKY

SINCE the publication of Stevens' and Elliott's monograph on "Unit Costs of Higher Education,"<sup>1</sup> there has been a considerable amount of discussion of the wisdom of this attempt to subject the processes of higher education to such a matter-of-fact procedure as cost analysis. The proceedings of the Association of Business Officers and of the Association of Business Officers of the Eastern States have devoted a great deal of attention to this topic. Educational surveys of higher institutions have made use of unit cost techniques. Particularly in the case of publicly supported colleges and universities there has been a demand from taxpayers and other interested citizens for full information regarding the fiscal conditions at their institutions.

Obviously, information concerning the total expenditure of a college is not particularly enlightening unless the size of the institution be taken into account. Such a procedure of necessity involves the expressing of expenditure in terms of some comparable unit. The unit usually employed is "the student," and costs per student are found by dividing the total expenditures by some figure representing the number of students at the institution concerned.

A cursory examination of the published accounts of unit costs reveals that there is no uniform method of determining just what figure the divisor should represent. In some cases average monthly enrollment has been used. In other cases the divisor has been the total individual students registered. Again, the sum of enrollments of two semesters or three terms has been employed. In cases where there was evidently a need to show a low unit cost, extension and correspondence students have even been included.

We have suggested elsewhere<sup>2</sup> that the annual carrying load is the proper figure to use for a

divisor. The annual carrying load of an institution represents the average enrollment for the two semesters or three terms of the regular session plus the summer session enrollment reduced to a basis of thirty-six weeks. Special and fine arts students not regularly enrolled in college courses are not included in the annual carrying load and the cost of providing training for these students is also to be excluded.

Any one of several expenditure figures may be used as the base of the cost study depending upon the information that is desired. Those most frequently used are: (1) current expenditure for all educational purposes; (2) current expenditure for instructional salaries; (3) current expenditure for all instructional purposes; (4) total current expenditures; (5) total cost including depreciation. For comparative purposes, the costs are then expressed as "cost per student for all current educational purposes," "cost per student for instructional salaries," "cost per student for instructional purposes," "total current cost per student" and "total cost per student."

One of the first questions that arises in the computation of unit costs is whether or not the financial accounts have been kept on a cash disbursements or on a true expenditure basis. The difference between these two bases of accounting may be illustrated by the situation in which an institution purchases some item of expendable supply, chalk let us say. On the disbursements method of accounting, when the invoice for the chalk is received and a check is issued in payment, the amount of the check appears immediately on the books as a disbursement. If the accounting is on an expenditure basis, the outlay for this chalk would not appear as an expenditure until the chalk is used up. If at the end of the fiscal period one-half the supply of chalk were still on hand, it is evident that the "cost" for this item, as figured on the two bases, would be different. Similarly it sometimes happens that goods are received and some use made of them before pay-

<sup>1</sup> Stevens, E. B., and Elliott, E. C., Unit Costs of Higher Education, The Macmillan Company, New York, 1925.

<sup>2</sup> Reeves, Floyd W., and Russell, John Dale, College Organization and Administration, Board of Education of Disciples of Christ, Indianapolis, 1929.

ment is made. In such case the amount used up would appear as an expenditure, but not as a disbursement.

It is usual in commercial accounting to have the books set up to yield true expenditures as well as cash disbursements. In college accounting very rarely are the books set up to show true expenditures. College business officers advance two reasons why the cash disbursements method should be used in their accounting.

In the first place, it can readily be seen that the calculation of true expenditures involves a somewhat more complex system of accounting as well as a considerable increase in clerical labor. The additional labor is necessitated by the taking of inventories and by the increased complexity of the closing of the books. In the second place, it is argued that inventories, outstanding accounts and accruals generally run about the same from year to year. To take them into account would probably not introduce any significant change from the figures derived by the cash disbursements method. It should be noted that this last point is not based upon a scientific study of the constancy of inventory values and accruals but that it is a matter of opinion only.

From a technical standpoint, one should not use the word "cost" unless the figures are on a true expenditure basis. If it may be assumed that disbursements and expenditures are equal, then the word "cost" might be used in connection with figures that are derived from disbursements. Throughout the remainder of this study it has been assumed that expenditures are approximately equal to disbursements and the word "cost"

is used under this assumption. In order to avoid confusion, the word "expenditures" is also used, although for the data on which the study is based the word "disbursements" would probably be more accurate.

As an illustration of the use of unit costs calculated upon the various bases mentioned, Table I is presented. This table, which is taken from the unpublished report of a recently completed survey,<sup>1</sup> shows costs per student at five institutions.

Great care must be taken in comparing costs among institutions. Strictly speaking, costs are comparable only among institutions that are of approximately the same size and that offer the same grade and type of work. It should be obvious that a college that does a high grade piece of work, other things being equal, will have a higher cost per student than a college that is doing inferior work. Within certain limits the cost per student thus becomes an index of the quality of work done by the college.

The size of the institution markedly affects the cost per student, even though the quality of work remains the same. Other things being equal, the smaller the enrollment, the higher the cost per student. This relationship seems to hold until an enrollment of approximately 750 is reached, after which it appears that any further increase in the student group is not accompanied by a lower cost per student. The relation of the size of enrollment to the cost per student is illustrated by data collected from twenty-nine colleges accredited by

<sup>1</sup> Report of a survey of nine Baptist educational institutions of Kentucky, Bureau of School Service, University of Kentucky.

TABLE I—COST PER STUDENT FOR COLLEGE PURPOSES, CLASSIFIED ACCORDING TO EXPENDITURE BASE, AT FIVE BAPTIST INSTITUTIONS IN KENTUCKY

<i>Expenditure Base</i>	<i>Cost per Student for College Purposes at Institution</i>				
	<i>A Junior College</i>	<i>B Junior College</i>	<i>C Junior College</i>	<i>D Junior College</i>	<i>E Four-year College</i>
1. Instructional Salaries .....	\$154.92	\$ 80.08	\$114.72	\$ 96.42	\$207.03
2. Total Current Instructional Expenditure .....	163.99	85.39	118.58	102.39	225.56
3. Total Current Expenditures for Strictly Educational Purposes ....	272.31	108.68	142.83	125.09	365.85
4. Depreciation on Academic Plant and Equipment .....	20.88	14.28	3.57	13.95	14.66
5. Interest on Academic Plant Investment .....	34.81	23.81	9.70	23.26	24.44
6. Grand Total Accrued Economic Cost .....	328.00	146.77	156.10	162.30	404.95
Number of Students .....	59	84	46	129	358
(Annual Carrying Load)					



TABLE II—EXPENDITURES AT A SMALL UNIVERSITY, CLASSIFIED ACCORDING TO FUNCTIONS, TOGETHER WITH COSTS PER STUDENT FOR EACH FUNCTION

<i>Function</i>	<i>Expenditure for Fiscal Year, 1928- 1929</i>	<i>Expenditure for Regular Academic Year Not Including Summer Session</i>	<i>Expenditure per Student for Regular Academic Year<sup>1</sup></i>
1. Instructional Salaries .....	\$ 91,844.64	\$ 87,190.64	\$246.30
2. Instructional Supplies and Equipment .....	10,743.36	10,654.04	30.09
3. Library .....	16,694.68	16,595.33	46.87
4. Total Current Instructional Expenditure (Sum of 1, 2 and 3) .....	119,282.68	114,440.01	323.27
5. Administration and General .....	26,747.24	24,072.52	68.00
6. Operation and Maintenance .....	13,058.70	11,668.54	32.96
7. Student Welfare .....	1,669.33	1,669.33	4.71
8. Total Expenditure for Strictly Educational Purposes (Sum of 4, 5, 6 and 7) .....	160,757.95	151,850.40	428.93
9. Depreciation on Academic Plant and Equip- ment .....	26,343.16	20,265.16	57.24
10. Interest on Academic Plant (5 per cent) ....	43,787.24	33,682.50	95.14
11. Grand Total Accrued Economic Cost, Includ- ing Current Expenditure, Depreciation and Interest on Plant and Equipment (Sum of 8, 9 and 10) .....	230,888.35	205,798.06	581.32

<sup>1</sup> Based on an annual carrying load (1928-1929) of 354 students.

the North Central Association of Colleges and Secondary Schools. These data, which are for the academic year of 1925-1926, are shown in Fig. 1.

In the study from which the data shown in Fig. 1 are taken,<sup>1</sup> it seemed desirable to equate the costs among institutions of various sizes so that they could be directly compared. The method used for equating the costs was a weighting applied in accordance with the size of the institution. This weighting was made arbitrarily on the basis of other data which show that an institution of less than 350 students costs approximately 1.5 times as much per student as one with 750 or more students enrolled. An institution with an enrollment of 350 to 500 costs approximately 1.2 times as much per student as one with 750 or more students. In both cases the presumption is that all other factors are held constant and that the size of the institution alone is the variant which is affecting the cost.

In the study referred to, therefore, actual per capita costs for institutions with enrollments below 350 were weighted by multiplying them by .667, and those for institutions with enrollments from 350 to 500 were weighted by multiplying them by .833. Institutions having enrollments greater than 500 were given a weighting of 1.00, since the differences between per capita costs in institutions having enrollments between 500 and

750 are relatively small. Such a calculation resulted in a figure which was called "weighted expenditure per student."

It must be clearly borne in mind that this artificial figure called "weighted expenditure per student" is an attempt to equalize only one factor which disturbs the use of unit costs for purposes of comparison among institutions. Two important factors which are not taken into account are the type of program offered and the quality of

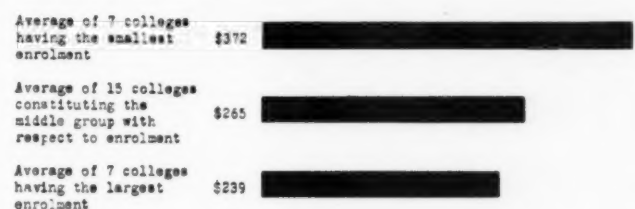


Figure 1.

the education given. In the study referred to previously, the data were limited to four-year liberal arts colleges, thus equalizing the matter of the type of program offered; and the variable, "quality of education," was the one which it was desired to estimate from a knowledge of the costs per student. Under other circumstances it might not be justifiable to use even a weighted measure of cost per student for such purposes.

Unit costs are at present probably more valuable for use in the internal administration of an institution than for comparison among institutions. Table II shows for a small university of

<sup>1</sup> Reeves, Floyd W., and Russell, John Dale, *The Measurement of College Excellence*, Bulletin of the Bureau of School Service, Volume I, No. 4, University of Kentucky, Lexington, June, 1929.

354 students the expenditures for 1928-1929 classified according to function together with costs per student for each function.

Costs per student have a limited application for purposes of comparisons within a given institution because of the difficulty of assigning any specific number of students to a given division of the college. A smaller and more easily allocated unit than the "student" is needed for this purpose. One such unit that has been found to be valuable for studies among departments, instructors and courses of a college is the student-credit-hour. The student-credit-hour may be defined as the measure of load represented by one student carrying a one-credit course. Twenty students carrying a three-credit course make sixty student-credit hours. The student-credit-hour unit may be used with any one of several bases, such as instructional salary expenditures, current expenditures for educational purposes and total cost (current expenditures plus depreciation). The various unit costs then become "instructional salary costs per student-credit-hour," "current expenditures per student-credit-hour," and "total costs per student-credit-hour."

#### *Unit Costs for Each Course*

These unit costs may then be worked out for each separate course offered in the college, for each instructor, for each department, for groups of departments and for any other category that seems desirable. In somewhat fuller illustration of the method used and the results that may be obtained, data are given for one institution showing the computation of student-credit-hour units.

The technique employed in setting up student-credit-hour costs was as follows: The teaching load of each course offered in the institution was first measured by giving equal weight to student hours and teaching hours. A student hour is defined as one student under instruction in lecture, recitation or quiz for one hour (50 minutes net) each week or in laboratory for one and one-half hours. Thus twenty students under instruction for a three-hour lecture course each week would represent sixty student hours as well as sixty student-credit-hours.

In a laboratory course the number of student hours usually exceeds the number of student-credit-hours since one student under instruction in the laboratory for one and one-half hours each week constitutes one student hour, while one student customarily must be taught in the laboratory two or three hours each week to constitute

one student-credit-hour. The teaching hour as used in this study represents one hour of lecture or discussion or one and one-half hours of instruction in the laboratory or in scheduled quiz sections.

In order to find the salary cost of each course, the percentage of the total salary cost of the instructor by whom the course was offered, corresponding with the percentage of the instructor's total teaching load allocated to that particular course, was charged to the course. "Salary" was considered to be the salary of the instructor plus the salaries of all the assistants employed for his course. This procedure was followed for every course offered in the college. The student-credit-hours produced by each course were computed by multiplying the enrollment in each course by the number of credit-hours it carried. The salary

TABLE III—SALARY COST PER STUDENT-CREDIT-HOUR FOR SELECTED COURSES AT A TYPICAL LIBERAL ARTS COLLEGE OF 1,000 STUDENTS

<i>Course</i>	<i>Enrollment</i>	<i>Salary Cost per Student- Credit- Hour</i>
English 2 (Section 1) . . . . .	37	\$ 2.39
Old Testament (Section 2) . . . . .	39	2.92
Chemistry 2 . . . . .	59	4.17
History 33 (Section 1) . . . . .	18	5.02
Philosophy 57 . . . . .	17	5.58
Education 41 . . . . .	36	6.38
History 2 . . . . .	24	6.87
Physics 13 . . . . .	13	9.01
Home Economics 2 . . . . .	12	11.50
Latin 2 . . . . .	8	15.37
History 79 . . . . .	4	18.37
Home Economics 31 . . . . .	6	21.81
Latin 53 . . . . .	3	25.50
Latin 13 . . . . .	2	34.25
Biology 39 . . . . .	1	55.28
Mathematics 15 . . . . .	1	82.50
Average (Arithmetic Mean)		\$ 7.10
(Median) . . . . .		10.05

cost of each course was then divided by the number of student-credit-hours the course produced. This gives the salary cost of each course in terms of student-credit-hours. Similarly, to obtain the salary cost for student-credit-hours by departments, the total salary cost of each department was divided by the number of student-credit-hours earned in the department.

Table III shows the enrollments and the instructional salary costs per student-credit-hour for a number of selected courses offered in a typical liberal arts college of 1,000 students.

An examination of Table III shows that on the

<sup>1</sup> The illustrative data contained in the remainder of this paper are taken from *College Organization and Administration* by Reeves and Russell, published by the Board of Education of Disciples of Christ, Indianapolis.

average an expenditure of \$7.10 in salary is required to produce one hour of credit for one student in this college. A wide range of costs is noted among the various courses, from \$2.39 for a credit in English 2 up to \$82.50 for a credit in Mathematics 15.

Table IV shows the instructional salary costs per student-credit-hour by colleges and by departments in a university with an enrollment of 354 students.

Table IV shows that a wide variation exists among the various departments in the cost of producing an hour of credit. The college of pharmacy is decidedly less expensive than the average for the institution as a whole, while the school of law has a cost somewhat higher than the average. In the college of liberal arts, the department of home economics and the department of engineering stand out as the expensive departments. To a large degree these costs are influenced by student enrollments in the various departments although the range of salaries paid instructors also enters into the situation.

In order to provide a program of studies academically sound, it is necessary in all colleges and universities to offer some courses and maintain some departments that are more expensive per student-credit-hour than other courses and departments or than the respective averages for

the institution. No course or department should be condemned upon the basis of cost alone. However, the fact that a course or department continues through a period of years to be expensive is a sign that a careful study should be made to find out whether its contribution to the entire educational program is sufficiently great to warrant its cost.

Three principal factors affect the salary cost per student-credit-hour. The first is the salary of the instructor. Other things being equal, the instructor with the lowest salary will be producing credits at the lowest cost. The second factor is the teaching hour load carried by the instructor since, other things being equal, the greater the load the lower the cost per unit. The third factor is the number of students enrolled. This, of course, conditions the credit-hour production of a course.

Costs per student-credit-hour are valuable not only for comparison among the departments, courses and instructors within a single institution but also for comparisons among institutions. Table V shows salary costs per student-credit-hour separately by departments for several colleges and universities, together with the salary cost for each department in the median institution.

When costs per student-credit-hour are com-

TABLE IV—INSTRUCTIONAL SALARY COSTS PER STUDENT-CREDIT-HOUR BY COLLEGES AND BY DEPARTMENTS IN AN INSTITUTION OF 354 STUDENTS

<i>College and Department</i>	<i>Total Instructional Salaries, First Semester, 1928-1929</i>	<i>Total Student-Credit-Hour Load, First Semester, 1928-1929</i>	<i>Cost per Student-Credit-Hour for Instructional Salaries</i>
The College of Pharmacy .....	\$ 2,550	459	\$ 5.56
The School of Law .....	3,900	343	11.37
The College of Liberal Arts .....	34,065	4,231	8.05
Chemistry .....	3,175	592	5.36
Mathematics <sup>1</sup> .....	1,560	278	5.61
Biology and Geology .....	3,350	554	6.05
Mathematics and Physics .....	2,860	460	6.22
English .....	3,700	591	6.26
Modern Languages <sup>2</sup> .....	2,768	415	6.67
Physics <sup>1</sup> .....	1,300	182	7.14
Social Science .....	3,800	522	7.28
Business Management .....	2,215	281	7.88
Foreign Languages and Literatures ....	3,550	448	7.92
Education, Philosophy and Psychology .	2,750	281	9.79
Religion and Freshman Lectures .....	1,000	88	11.36
Engineering .....	5,665	339	16.71
Ancient Languages <sup>2</sup> .....	782	33	23.70
Home Economics .....	2,000	75	26.67
Total for Whole Institution .....	\$40,515	5,033	\$ 8.05

<sup>1</sup> Included also in the department of mathematics and physics.

<sup>2</sup> Included also in the department of foreign language and literatures.



TABLE V—SALARY COST PER STUDENT-CREDIT-HOUR FOR EIGHT SUBJECTS AT TWELVE COLLEGES

<i>Institution</i> Number	<i>Biology</i>	<i>Modern Language</i>	<i>English</i>	<i>History</i>	<i>Mathematics</i>	<i>Home Economics</i>	<i>Chemistry</i>	<i>Ancient Language</i>
1	\$3.27	\$5.08	\$3.64	\$4.04	\$ 5.92	.....	\$17.84	.....
2	6.37	5.25	4.62	6.95	11.61	\$17.52	8.80	\$14.83
3	.....	....	4.48	2.09	....	.....	.....	18.51
4	2.67	3.08	1.83	4.54	5.12	7.47	8.69	6.46
5	3.11	4.69	5.14	3.62	10.29	9.01	9.29	15.00
6	4.24	3.49	4.01	4.46	6.36	12.06	7.93	14.52
7	3.14	5.40	4.61	5.73	7.01	....	8.15	9.93
8	6.26	3.24	3.53	3.88	4.82	6.14	2.51	4.18
9	2.48	3.00	1.65	2.32	2.38	6.77	2.40	2.88
10	3.83	3.08	4.16	5.46	6.99	....	6.99	....
11	3.43	6.54	3.37	3.79	3.43	....	4.43	7.37
12	3.67	3.62	2.51	4.61	7.50	7.09	2.90	11.68
Median In- stitution	\$3.43	\$3.62	\$3.83	\$4.40	\$6.36	\$7.47	\$7.93	\$10.80

puted by departments, it is of value to compute not only the salary cost but current cost and total cost as well. The current cost of a department is obtained by finding the sum of the salary cost, other direct costs and allocated overhead costs of the department. The overhead expenditure, which is allocated on a basis of total student hours, includes all items listed under budgetary headings, "Administration and General Expense," and "Operation and Maintenance of the Physical Plant." Expenditures for the library under the budgetary heading "Instructional" are also included as overhead. Expenditures for "Specially Designated Objects Not Strictly Educational" are not included in this overhead. To find the student-credit-hour current cost for a department, the current cost of the department is divided by the number of student-credit-hours in the department.

#### *Total Cost Includes Depreciation*

Total cost is the same as current cost except that a figure for depreciation is added. The depreciation figure is allocated to departments on the same basis as other overhead charges. Total cost per student-credit-hour is then computed by dividing the total cost figure allocated to a department or instructor by the number of student-credit-hours produced by that department or instructor. Table VI shows comparative costs per student-credit-hour for ten colleges.

The subject of unit costs should not be dismissed without some cautions as to the uses and interpretations of such data. Attention has already been drawn to the fact that costs per student, based upon annual carrying load, need to be interpreted with regard to the size of the institution for which data are being studied. When

this factor is properly accounted for, a given cost per student may be used in two different ways: (1) as a measure of the quality of the educational offering and (2) as a measure of the efficiency of the administration of the college.

Clearly these two measures work in exactly opposite directions. In an institution with a higher than average cost per student, it is impossible, from this measure alone, to judge whether the educational offering is higher in quality than the average or whether the efficiency is lower than the average. If, however, some other objective measure of the quality of the educational offering is available, the cost per student may become an index of efficiency. On the other hand, if other objective measures of administrative efficiency are available, the cost per student may be interpreted into an index of quality of educational offering.

Take, for illustration, an institution which has a higher than average cost per student and which also has a median size of class equal to or above the average, with very few small classes and very few large classes and a satisfactory per cent of total expenditures devoted to instruction. The measures of size of classes and percentage of funds devoted to instruction become objective measures of efficiency, and thus it might be possible, in this instance, to interpret the higher than average cost per student as a higher than average quality of educational offering since the institution is judged on the basis of efficiency.

The other unit for the computation of costs that has been used in this report, the student-credit-hour, must also be interpreted cautiously. It has already been pointed out that this unit cost is affected principally by three factors—the instructor's salary, his teaching load and the en-

rollments in his classes. It is clearly impossible to bring all courses, all departments or all instructors to a dead level of cost per student-credit-hour.

In general, advanced classes will be smaller than elementary classes and elective classes will be smaller than required classes. Thus a given cost per student-credit-hour for a certain course should be interpreted first as to whether it is a freshman course, a senior course or a graduate course, and second as to whether it is a course required for graduation or an elective course open to students with certain special interests. Some departments offer work primarily at the junior-college level while others offer a program principally at the senior-college level. The low cost of the modern language courses shown in Table V may be partially explained on this basis. The second factor, that of being a graduation requirement, also operates to keep modern languages at a low unit cost, since most of these institutions require foreign language for graduation.

#### *Class Size Depends on Subject*

It is generally recognized also that certain types of subject matter can be handled effectively in large classes while other subjects must be given in relatively small classes. Furthermore, it is generally recognized that certain types of subject matter constitute a heavier teaching load, hour for hour, than do other subjects. Both of these observations, while generally accepted to a certain extent, need a careful scientific study before being accepted as absolutely proved.

In illustration of the type of a subject which must be handled, according to current thought,

in small classes, English composition may be selected. The same subject might also serve to illustrate a subject that is placing a heavy load on an instructor per teaching-hour due to the large amount of paper work involved. Perhaps a better illustration of the recognition of a heavy teaching load inherent in the nature of the subject matter would be the rather universally accepted principle of giving a lighter load in teaching hours in schools of law.

Table V showed that in general the laboratory sciences of chemistry and home economics have high costs per student-credit-hour. The biological sciences, however, are at the extreme low end of the scale of costs by subjects. Data are not available upon which a final conclusion may be made as to the possibility of teaching chemistry and home economics in any less expensive way, nor does there appear to be any objective evidence of a contribution of these sciences to the curriculum sufficient to warrant their relatively high cost. As a matter of fact, the high cost in home economics is due largely to three factors: (1) the light load of teaching hours which most home economics instructors insist upon carrying; (2) the fact that the courses appeal to only half of the student group—the young women and (3) the heavy specialization of subject matter—equivalent to a double major—required to qualify teachers of home economics under the Smith-Hughes law.

It is generally recognized also that higher salaries are more necessary in some departments than in others in order to attract equally well qualified instructors. A factor of this kind will obviously affect the cost per student-credit-hour

TABLE VI—COMPARATIVE COSTS PER STUDENT-CREDIT-HOUR IN TEN COLLEGES

Institution Number	Costs per Student-Credit-Hour				
	Total Cost (Sum of Columns 2 and 5) (1)	Current Cost (Sum of Columns 3 and 4) (2)	Salary Cost (3)	Current Cost Other Than Salaries (4)	Depre- ciation Cost (5)
1 .....	\$ 4.60	\$ 4.24	\$ 2.59	\$ 1.65	\$ 0.36
2 .....	6.44	5.92	3.67	2.25	.25
3 .....	6.90	6.40	3.88	2.52	.50
4 .....	7.65	6.73	3.43	3.30	.92
5 .....	7.73	6.48	3.38	3.10	1.25
6 .....	9.58	8.80	5.02	3.78	.78
7 .....	9.60	8.82	5.00	3.82	.78
8 .....	9.85	8.85	5.50	3.35	1.00
9 .....	10.31	9.49	5.25	4.24	.82
10 .....	14.34	13.17	7.10	6.07	1.17
Median Institution ...	\$ 8.66	\$ 7.77	\$ 4.23	\$ 3.33	\$ 0.80

by departments. When costs are compared among instructors, it is clear that, other things being equal, the instructor having the higher salary will have the higher cost per student-credit-hour. The tendency is usually to assign the higher salaried instructors to the more advanced classes. Thus the two factors combine to produce a higher unit cost. Certainly it would be a mistake to attempt to equalize costs by assigning the higher salaried instructors exclusively to elementary classes of large enrollment while lower salaried instructors, with correspondingly lower qualifications, are assigned to the smaller advanced classes. Such an attempt would be a serious misuse of unit costs. Similarly an attempt to adjust instructors' salaries to take into account production of student-credit-hours and thus equalize salary cost per student-credit-hour probably would be a mistake.

#### *Credit-Hours Not of Equal Value*

In general, any attempt to equalize costs per student-credit-hour must take into account the fact that all credit-hours are probably not of equal value either to the educational objectives of the institution or to the welfare of the individual student. Such an analysis goes immediately down to the bedrock of the educational philosophy on which the administration of the institution is based. It ought always to be possible for an administration to justify a certain amount of inequality in costs between subjects on the basis of its own philosophical evaluation of the relative worth of the subjects.

Such are some of the possibilities and limitations of the use of a unit cost, such as the student-credit-hour. Particularly at the time of the planning of the budget such a measure becomes useful. Heads of departments should be supplied with information concerning the student-credit-hour costs of courses in their own departments, of the instructors in their department and of the department as a whole, together with comparative information concerning costs in other departments of the college.

Expansions or retrenchments in the future program can then be justified to some extent on the basis of what will happen to the cost per student-credit-hour. Departments with a cost already considerably above the average for the institution as a whole should be called upon to justify very completely any request for an expansion. When confronted with unit cost figures for the whole institution, department heads are able to plan their own offerings with reference to the needs of the institution as a whole rather than from the selfish and isolated viewpoint of the welfare of a single department.

## A Plan for Expert Supervision in the Fundamental Subjects

The most important contribution that was made to the program of the National Education Association department of supervisors and directors at the annual N. E. A. convention, was made by James F. Hosic of Teachers College, Columbia University, according to Robert J. White, assistant county superintendent of schools, Martinez, Contra Costa County, Calif., writing in the *Sierra Educational News*.

Mr. White writes:

"Professor Hosic raised the question of how the schools can get the expert supervision in regular subjects that they have had for some time in special subjects. He contended that many subjects that are of limited benefit to any except a very small proportion of students are oversupervised, while the fundamental subjects are neglected. His suggestion for a remedy was that teachers in all grades of the elementary schools should teach only their special subjects.

"According to this plan a hundred pupils of about the same grade would be assigned to four teachers, each a specialist in one line of the work to be taught, and one of whom would be designated as the group leader. He claimed that the group plan, since it bound together all the teachers dealing with that group of children, did away with the chief objections to the old stratified departmental plan in which teachers tended to group themselves around the subjects they taught rather than around the children they taught. Also that it was different from the platoon plan since it was not devised nor designed to fit a special school plant."

## What Is Wrong With the Teaching of Modern Languages?

Nineteen per cent of high-school pupils in modern languages are flunking. Walter Kaulfers of Stanford has been trying to find out why this is so. One thousand boys and girls studying Spanish were given intelligence tests. They were found to be above the average intelligence; this was true even of the flunkers. "And so," says Mr. Kaulfers, "the suspicion becomes strong that a high rate of mortality may be due rather to faults in the teaching and organization of the courses than to deficiencies in the pupils." The trouble seems to be the tedium of the grammar method of teaching language and the fact that the teachers are specialists in language with little training in methods of education.





# Obstacles to Supervision and Means of Overcoming Them

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**W**HAT is supervision? Supervision of instruction is the attempt to improve classroom procedure. Supervision seeks to improve the technique of instruction, teaching or the learning process. In the words of one supervisor, the supervisor's job is to teach teachers how to teach.

How can supervision improve teaching? "The function of supervision is the improvement of instruction through the recognition of effective content and methods and elimination of ineffective material and practice."<sup>1</sup> In other words, the supervisor must know what constitutes good, or effective teaching and that which is poor, or ineffective.

Is supervision important? There are still some persons who doubt the value of supervision of instruction in the secondary school. This matter, however, will not be argued here. That supervision is both important and necessary is assumed throughout this article. Prof. Thomas H. Briggs says, "Instruction is the most important activity going on in a school, and the improvement of instruction is the most important aim a principal should have in mind." It is also true, probably, that criticism is directed more against faulty supervision than against supervision itself.

What does supervision in high schools include? A too narrow conception sometimes holds that the visiting of classes constitutes all there is to supervision. Supervision is broader. Without attempting to be encyclopedic or exhaustive, the following are some of the duties that the capable,

conscientious supervisor will be performing in his attempts to improve classroom instruction: visiting classes; conferring with individual teachers; conferring with teacher groups; studying, reading, investigating and otherwise preparing himself for these visits and conferences; preparing and distributing bulletins relative to improvement of classroom instruction; initiating and carrying on classroom experiments, tests and demonstrations; formulating and determining courses of study, teaching schedules, curriculum reorganization, teaching methods, references and outside readings; selecting texts and other classroom tools; assisting in hiring teachers; curricularizing the extra-curricular; providing for inter-visitation of teachers in and out of the local school system; delegating and sharing supervisory duties with the superintendent, heads of departments, special subject supervisors, state department of public instruction and other supervisory services that are now available in some places. The University of Wisconsin has recently organized and is now offering to Wisconsin high schools such service for its own graduates.

## *Ignorance of Good Teaching Is Obstacle*

What are some of the obstacles that are encountered in supervision in high schools and how may they be overcome? The chief obstacle, in the opinion of many, is ignorance on the part of secondary-school administrators of what constitutes good and poor teaching and lack of ability to improve teaching. According to Francis L. Bacon, past president, National Association of Secondary-School Principals, "the secondary

<sup>1</sup> Bacon, Francis L., *Supervision in Secondary Schools*, Proceedings of the Twelfth Annual Meeting of the National Association of Secondary-School Principals, Boston, 1928, Page 131.

school knows little and does less about supervision."<sup>1</sup> Principals, generally, do not recognize good or poor teaching when they see it. Perusal of the literature on supervision as well as the personal experience of many high-school principals bear out this statement. Bacon, McAndrews, Adair and Judd all mentioned it at a recent meeting devoted to the problem of supervision in the secondary school. How remedy this state of affairs? The only remedy is to know more and do more supervision. This statement is more easily said than carried out. Nevertheless, it puts the problem squarely up to the high-school principal. "Without knowledge the people perish." Without supervision, the high school does not deserve the name. The principal, and none other, must overcome the obstacle of ignorance of good and poor teaching.

A further difficulty is the faulty training given to teachers and administrators of the secondary school. High-school teachers and supervisors are filled up with subject matter and book content materials. Strangely, although teachers' colleges and normal schools have been strikingly successful in influencing the development and practice of supervision in the elementary school, they have not had a similar influence in the secondary school. Teachers' colleges must recognize the importance of this problem and proceed to train their students for supervision in the secondary school.

#### *Importance of Supervision Overlooked*

Another problem, closely allied to the two just discussed, is the inability of school boards and superintendents of schools to recognize good and poor teaching when they see it. Much of this shortcoming is caused, as in the case of principals and of teachers' colleges, by the failure to appreciate and recognize the significance and importance of supervision. These authorities frequently give promotions to principalships of high schools, grant salary increases and otherwise show a lack of realization of what really constitutes good high-school administration for reasons other than the betterment of teaching in the high school. To improve this situation, a proper recognition on the part of school boards and superintendents of the place of supervision in the secondary-school program is necessary. Such recognition will lead to salary and other preferences for the high-school principal who is a capable, effective high-school supervisor. The principal, himself, can be a prime factor of the

greatest importance in helping bring about this change of attitude by demonstrating and proving the value of effective supervision.

Another obstacle that prevents many principals from doing effective supervision is so-called lack of time. In a recent study of nearly a hundred high-school principalships in Illinois and Wisconsin, such duties as schedule making, necessary social functions in and out of school, preparing budgets and supervising the finances of school activities, giving and administering vocational, educational, personal and character guidance, extra-curriculars, teaching, performing clerical and janitorial duties and attending to various community demands were listed most frequently by high-school principals as time consumers.

#### *Principal Has Many Duties*

That the high-school principal is overwhelmed with a multitude of pressing duties, many of which confront him with arresting insistence, is realized by those who have had the responsibility of directing a high school.

While I do not wish to underestimate the load now carried by many principals, it is a psychological truth that "we find time to do those things we like to do" and that "we enjoy doing those things we do best."<sup>1</sup> If we, as high-school principals, actually like supervision, we will find time for it. If we are adept, skillful and effective at supervision we will enjoy it. Is it not largely because of our ineptness and ineffectiveness as supervisors that we lack time for supervision? The principal can by delegating minor duties create for himself a larger margin of time for supervision. Effective organization of his school will require the assistance of deans, student and home room advisers, vocational advisers, assistant principals, monitorial helpers and the like. Paid office and other assistance required in order to free the principal for such a program of supervision can usually be secured if the effectiveness of such supervision is demonstrated to the school board and to the superintendent. A principal who continues to feel that he is attaining his maximum effectiveness while performing clerical, janitorial or monitorial duties is, unfortunately, occupying the wrong chair in the institution he presumably directs.

Once the principal has secured the time necessary for an effective program of supervision, he should make a definite schedule for supervisory duties and then adhere to it, regardless of office callers, agents, telephone calls and other interruptions. The high-school principal is accessible

<sup>1</sup> Twelfth Annual Meeting of the National Association of Secondary-School Principals, Boston, February, 1928, Bulletin No. 20. This bulletin may be secured from Secretary H. V. Church, J. Sterling Morton High School, Cicero, Ill.

<sup>1</sup> Thomas H. Briggs, theses presented to class in supervision, at Columbia University, summer of 1926.



*Here the supervising principal is shown conferring with the faculty of his school.*

altogether too much these days to anyone and everyone. In schools enrolling from 200 to 1,000 pupils, the principal can at least make the attempt to budget his time. In schools enrolling less than 200 or more than 1,000 pupils, other factors enter in which prevent any really effective supervision of instruction on the part of the high-school principal.

As soon as the principalship is thought of as a supervisory rather than as an administrative and clerical position, then the high-school principal, in the words of Prof. Charles H. Judd, will "approach his task as a scientist should."

#### *Teachers Resent Supervision*

What high-school principal has not run up against the obstacle of teachers, principally, but also patrons and school-board members, who are antagonistic to and resent his attempts at supervision? Such an attitude will test his courage and mettle to the utmost. There are as many cures as there are causes for such unprofessional attitudes. Some will require personality adjustments; some are simply unadjustable. Some will involve the painfully slow and tortuous methods of changing emotionalized attitudes, habit and training fixations. How to get an old teacher to respond properly to supervision by a young principal is a problem that may defy his best efforts.

It is extremely easy under such difficulties to lack time for supervision. Right here is a cru-

cial test that will largely determine whether or not he is to become a supervising principal or a business manager of his school.

Let the principal try to win the confidence of those who oppose his supervisory efforts. Above all, let him show all critics and doubters why, and prove by evidence how supervision is worth while and effective in improving teaching. Such objective evidence is becoming increasingly available to the scientifically minded principal. A number of the newer techniques or instruments of measurement and testing at this point may well become invaluable to the determined principal. Several that are being found useful in high schools to-day are Morrison's "Attention Technique," Brueckner's "Time Analysis," Torgerson's "Diagnostic Rating Scale," and Barr's "Activities' Check List."

It ought not to be necessary to add that tact of a high order and other virtues of personality are necessary to overcome this obstacle of antagonism. The temptation and opportunity to exercise autocracy and dictation in such cases may exist. Autocracy on the part of the supervisor is in itself an obstacle to supervision. Democracy in supervision is essential. The spiritual truth that we gain only if we give is nowhere more true than in supervision. To secure cooperation and results from supervision, we must request and suggest rather than command. This requires respect for the personality of co-workers.



In establishing helpful and confidential contacts with the teacher, a supervisory visit should always be followed by a conference between supervisor and teacher. Often opportunity for such conference exists in the classroom during the visit of the principal. Such conferences, on the ground floor as it were, have been found highly effective by some principals.

Improvement of instruction in high schools requires a broad knowledge of subject matter and method in a number of fields. This our principals, generally, do not have, which is another reason for delegating and deputizing minor duties. Much of this necessary knowledge can be obtained by the principal at summer schools. Perplexed high-school principals would like to have teachers' colleges and universities organize and offer orientation or contact courses in a number of subject fields both in the under-graduate course and in the graduate summer-school course. The principal's professional reading will also need to be broadened to include fields other than that of his major in college.

Until recently, a serious obstacle to effective supervision has been the lack of objective, valid and reliable standards of testing the results of teaching. Only as we are able to analyze actual classroom activities can we find answers to the problems of supervision. A number of these objective standards have lately become available and others are being prepared. These tests enable the supervisor to discover what good teaching in the classroom is. They are free from subjective considerations. The high-school principal can assist in the development of such instruments of measurement. He can not only use those that are available but he can also assist in preparing objective, reliable and valid standards in his school and with his teachers.

#### *Supervision Too Often Mechanical*

Supervision sometimes becomes technical and mechanical. C. J. Anderson had this in mind when he said recently, "We pay too much attention to methods and the machinery of teaching and not enough to basic, underlying principles of good teaching." Overemphasis on scientific and objective-mindedness on the part of the principal may cause us to press too far in this direction. To safeguard against this danger, we need to develop a philosophy of education as well as a philosophy of supervision. High-school people, generally, need to know better than they do what they are striving for and how to attain it.

The supervisor's visits may become excessively formal. Formality, or anything resembling it, has no place in a plan of democratic supervision.

Formality is encouraged by waiting too long before visiting a new or beginning teacher. New teachers will not have a chance to fix wrong emotionalized attitudes towards their supervisors if they are visited several times during the first month. By entering into the spirit of the class he visits, informality is engendered. Let him borrow a book, participate in speech, music and other class exercises. This usually brings about a more approachable attitude on the part of the teacher observed and helps remove tension and strain. But the supervisor should also remember his old, experienced teachers. Like others, he may feel that the older, experienced teachers do not need supervision. This, too, is an obstacle that needs to be overcome. The older, better and more experienced the teacher, the more will effective supervision help her.

#### *Sustained Personal Effort Necessary*

Supervision is frequently without plan or purpose. Much of it is of the hit-and-miss, casual, incidental, class-inspection-visitation kind. If supervision is to be made really effective, the principal must lay his plans carefully in advance. He should decide upon certain objectives he hopes through his supervision to attain for the class, the subject or the teacher. To do this adequately will require sustained personal effort. Testing and evaluating are necessary to determine whether his objectives have been reached. Really to get what he is after may require stating and restating his point of view in his own mind and to the teacher or teacher group. In short, a program of supervision is necessary if results are achieved.

At the risk of inviting criticism for repetition, let it be said again that sustained personal effort on the part of the principal is absolutely essential. The principal owes it to himself, to his teachers and to the effectiveness of his supervision to continue supervision at any given time until a unit, an experiment, a problem, a project or a contract has been completed before he may come to a sound conclusion or give helpful suggestions and criticisms. He will need to reserve judgment. It is not necessary to come to any definite conclusion following each visit or conference. By concentrating on a few problems, a few subjects and a few teachers at one time, and then carrying on and following through until a given supervisory problem has been solved, increased effectiveness will result. As part of a program of supervision, a simple record system will greatly assist. The supervisor ought to keep records of his visits, conferences and conclusions from day to day and from year to year, for the

sake of comparisons and in order to note the progress of his teachers, their teaching and his own supervision.

Several other obstacles to supervision in the secondary school may be given brief mention here. Supervision, like everything worth while, costs money. With the general expansion of high-school activities that has taken place in addition to the constantly increasing enrollments, the public generally and school boards and superintendents of schools particularly may not care to supply the additional funds that a really adequate and helpful program of supervision may require. Supervision of instruction is a comparative newcomer among the items of the school budget and may suffer accordingly.

Traditional subject matter and stereotyped college entrance requirements also make supervision more difficult. These obstacles may well prove insuperable to the individual principal. Relief, however, is in sight. Curriculum reorganization is going on throughout the length and breadth of our land. College entrance requirements are being liberalized. Complete removal of these restrictions will come about only as the senior or four-year high school secures the same independence from domination that the junior high school has secured.

Finally, high-school principals frequently lack tenure and authority to inaugurate and carry through programs of supervision. Relief here, again, is largely beyond the control of the individual principal but must be forthcoming as the result of the awakened convictions of the public, school boards and superintendents that supervision is worth while and needs the support of all.

### The Weekly School Page in the County or City Newspaper

What are the advantages to the school of the weekly school page printed in the county paper or city daily?

According to Evaline Harrington, West High School, Columbus, Ohio, in an address made at the Atlanta convention of the National Education Association, the advantages of the school page are that it informs the public by concentrating on class procedure and activities, emphasizes scholastic achievements, affords practice in English composition, gives actual contact with printers and newspaper offices in towns, means no outlay of money for the school and brings the school, the home and the community closer together. In cities news from different schools promotes friendly competition.

The advantages to the paper printing a school page were enumerated by Miss Harrington as follows: It increases circulation. Relatives buy papers that contain their children's names and school people send for extra copies. It builds for the future in that children establish a habit for the paper printing the school page and acquire a newspaper sense, become intelligent readers and develop into regular subscribers. It increases the self-respect of the paper and its standing in the community if it fosters the all pervading interest that the general public is taking in public education. Its influence thus helps to pass bond issues and to promote a building campaign. By putting emphasis on achievements of mind and hand and the healthful phases of normal development, it counteracts the morbid interest in crime news.

### Keeping a Complete System of High-School Records

Every high school should have a complete system of records, according to T. E. Osborn, state high-school supervisor for Kansas writing in the *Kansas Teacher*. This system should be composed of a method of checking up and keeping the attendance of each pupil who attends the school, a pocket grade book for the teacher in which a record of grades made by the pupils in recitation, written tests and examinations is kept and a permanent record which may be safely kept from year to year. This permanent record is usually a sheet or card for each student showing his entire high-school record.

A permanent record should, Mr. Osborn writes, include all of the items of information required on a transcript for college entrance. The following essential items should be included:

List of subjects by years as taken by the pupil; number of recitations a week; length of recitations in minutes; number of laboratory periods a week; length of laboratory periods in minutes; grade given in the subject; number of units credit; a summary of each year's attendance.

The following nonessential items are desirable on a permanent record: list of books read by the pupil during his high-school course; record of extra-curricular activities engaged in by the pupil; record of intelligence and achievement tests taken by the pupil.

It is the duty and obligation of the head of the school, Mr. Osborn emphasizes, to see that the records are accurately kept and that they are protected against destruction by fire. A fireproof safe or vault should be provided for the permanent records of the school.



# The Teacher as a Confessor

*School instructors have great opportunity to aid in proper development of children suffering from mental irregularities by gaining their confidence and encouraging the expression of their difficulties*

BY M. V. O'SHEA, UNIVERSITY OF WISCONSIN, EDITOR-IN-CHIEF, THE NATION'S SCHOOLS

MODERN psychology lays great emphasis upon the need of expression in order to preserve a proper balance in human life.

I have been reviewing some striking evidence relating to this matter in studying the description of cases of boys and girls between the ages of twelve or thirteen and eighteen or nineteen who are or have been suffering with some form of nervous or mental irregularities. The specialist who treated these cases told me that a large proportion of the difficulties were caused by undue repression of the individual's thoughts and feelings. He maintained that it is practically impossible for boys and girls in the teens to preserve nervous and mental health unless they can quite freely convey their thoughts and feelings to others. He said that in the cases he had treated some of the repression was due to the harsh treatment that the victims had received at the hands of parents and teachers, but others appeared to have become self-centered without any external influence so far as could be traced. However, the physician said that if one could unravel the life of an individual who had become morbidly self-centered, it would be found that he had had some experience back in his career that had resulted in clamping the breaks on his expression so that he was compelled to live within until he lost the power to communicate his thoughts and feelings readily to the people about him.

## *Human to Talk Freely*

It is probable that nature has so constructed every normal individual that he will freely cite his experiences to his associates in order that they may profit by any valuable views he can present and so that he may gain the benefit of the experiences of others. If individuals had been so constructed that they would be willing to live entirely within themselves we could never have had human society as we know it to-day. If nature had not compelled an individual to share whatever he thinks, feels or discovers with others, the race never would have developed beyond the most primitive stage. In any group in which each in-

dividual lives unto himself, apart from his fellows, any one individual must rely almost completely upon himself in solving the problems of life.

But in human society as we have it now, any one individual is the heir of almost unnumbered millions who preceded him and of millions who are living to-day, all of whom have either left a record of their thoughts and feelings and their discoveries in solving problems of life, or who are now making a record or are communicating orally to their associates how they think and feel about their situations in daily life. Apparently nature does not wish any individual to survive who is wholly noncommunicative because he is a weak unit in the social group, and if his kind should prosper, human society would break down. So nature does in a way destroy the individual whose life becomes largely subjective or else who does not reveal his experiences. When an individual becomes nervously and mentally unstable he is on the road to destruction, and the most pathetic and cruel form of destruction at that.

## *Repressions Are Dangerous*

Undoubtedly readers of "Normal Instructor—Primary Plans" are familiar with the fact that present day psychology is concerned to a considerable extent with the subconscious part of the mental life. Most psychologists believe that a large proportion of any normal person's activities originate in subconsciousness. There are urges or driving forces that lie beneath consciousness. When these urges are completely repressed they tend to establish associations with other elements in subconsciousness and in this way they build up what are becoming so frequently and popularly spoken of to-day as complexes. People are said to have a complex in relation to this thing or that, and it is meant that an individual has become the victim of certain driving forces in his life that are constantly urging him into activities not harmoniously adapted to the situations in which he is placed. He is really alienated from his environment because he cannot, or at least does not adapt



his action to the requirements of his environment. He acts so as to increase instead of decrease the disharmonies of his life; he irritates people about him or he is suspicious of their motives and never acts confidently and naturally with them, or he is morbidly selfconscious in the presence of certain persons. It is the view of psychologists to-day that these complexes would never become established if the individual lived a normal mental life and revealed his experiences so that they would not be repressed in subconsciousness and form connections out of harmony with the life he should live.

#### *Victims of Many Fears*

If one could analyze the subconscious life of an individual who is withdrawing within himself probably it would be found that he is the victim of fears of one kind or another. It may be that he has become morbidly afraid of reciting in the classroom. I have been reviewing the testimony of a number of persons who have described fears of this kind. Here is a typical case. When this man was twelve years of age he broke down in reading one day in school when visitors were present. This made such a deep impression upon him that he was never able thereafter to read without terror lest he should break down. And to this day, though he is a mature man, he is unable to read for others although he regards his difficulty as wholly irrational and is angered at himself because of his timidity. But there is that experience embedded in his subconscious life and apparently it cannot be overcome. He testified that usually he told his teacher that he did not know his lesson in order to avoid the awful experience of trying to read, and he was frequently chastised because he had not prepared his lesson. And the farther he went with it the more difficult it became to tell the real reason why he could not read. The fact is that he never divulged it to anyone until he told the story in this investigation. Probably there are many pupils like him in the schools who are condemned for fears that are due to terror of recitation, but the individual himself misrepresents his condition because he thinks it is evidence of weakness. So long as it remains a secret with him probably the fear never can be overcome, and what is worse, it will work harm in his whole mental life. Students of juvenile delinquency believe that these repressed experiences often are the cause of misdemeanors such as lying and stealing.

There are other fears from which children often suffer without communicating the fact to anyone. One pupil may contract a morbid fear of another pupil although actually he has never

been harmed by that pupil. Psychologists find this to be rather frequent in human life—it even exists in adult life. It may be wholly irrational but it is nevertheless potent for harm in the victim's intellectual and emotional life. He will not tell anyone and so the fear grows by being repressed and works up for itself a complex that may handicap the victim in various ways.

Then there are morbid fears of thunder and lightning so that a child may live in almost constant dread of a possible thunderstorm. There are fears of animals, particularly snakes, and this fear may prevent an individual from securing sound sleep—the fear showing itself in terrified dreams. And so there are other fears that attack children. If they could be communicated freely to someone in whom the individual had confidence because of his knowledge and authority, and if this person could substitute for the fear an idea of confidence or safety or protection, the victim could be cured of his malady. But if it continues it will work serious harm in his nervous stability and his mental life.

Investigations have shown that at the approach of puberty many children become morbid about their health. They think they are being attacked by some disease, often a mental disease. If they read a symptoms-sheet sent out by a patent medicine manufacturer they find evidence that they are suffering from one or another of the afflictions described. Numerous instances have been reported by psychologists of children who have for years lived in terror of some malady that they have believed was about to overwhelm them. Children of this age will readily become the victims of patent medicine vendors because they are so open to suggestion in the matter of disease. They brood over what they think is some weakness but they cannot confess it, with the result that the longer it is repressed the more firmly it tends to become established and the more widely it forms harmful connections in the mental life.

#### *Early Interest Shown in Religion*

Many teachers do not appreciate that as early as the age of thirteen some children become seriously concerned about religious matters and especially about their own destiny. At this age there is usually a great upheaval in the emotional life. Investigations have shown that this is the age when genuine religious feeling becomes manifest. The phenomena of conversion are observed more frequently between the ages of thirteen and sixteen than at any other age. If in this religious awakening the individual can communicate freely to one who can help him out of intellectual perplexities, the religious life will develop normally,

but if conflict is developed and it cannot be solved, there is likely to be very serious disturbance in the individual's mental life. Probably there is no phase of personal experience that some individuals find more difficult to communicate than religious doubts or perplexities, and a considerable proportion of boys and girls between the ages of thirteen and sixteen or seventeen suffer in their intellectual and emotional life because they cannot or do not reveal their doubts, perplexities and problems to persons in whom they should have confidence and whose counsel would be a source of much comfort and assurance to them.

#### *Conscious of Personal Appearance*

At the approach of puberty many children become extremely conscious of personal appearance and they are apt to become more or less morbid about imagined peculiarities that they think attract the unfavorable attention of their companions. When they fall into this condition they misinterpret the attitudes and expressions of those about them and, unfortunately, the older they grow the more convinced they become that they are not like other persons. When they brood over this matter they develop a complex that causes them to feel and to act as though they were not as good or not as capable or as presentable as others. They do not communicate their feelings about themselves to others and this is why they persist in believing that they are peculiar. If they could once reveal their thoughts about themselves to any person whose judgment they respected, and if this person could show them that they are entirely wrong and could make light of what they have taken so seriously, they might be completely relieved.

What is required in all these cases is that the victim of these morbid ideas and feelings that are repressed should have someone to whom he may confess freely and that person must be one whom he believes has much more extensive knowledge and experience than he has and whose advice and counsel can be depended upon.

Of course, the parent ought to be a child's confessor but this is not usually the case. There is a peculiar reticence on the part of most children to reveal their personal experiences to their parents, and even if they did reveal them they would not have such confidence in their judgment as they would have ordinarily in the judgment of a teacher whom they regarded highly. A child has grown up with his parents and so they do not seem to be quite so remarkable as the teacher whose imperfections and shortcomings are not familiar to the child. For this reason the counsel of

a teacher who can gain the confidence of a child is likely to have much more weight in dislodging disturbing fears or obsessions of any sort than is the counsel of a parent. It is something like the influence that faith healers exert over subjects. These healers appear to have vastly greater wisdom, insight and power than ordinary persons and so what they say takes much greater effect in the life of the individual than what his acquaintances say to him. As a rule, one who has had long acquaintance with another person may have great fondness and regard for him, but this person cannot exert a profound influence upon the individual's life in changing the current of his thought and feeling because this current has become established during the acquaintance with the person. A new personality must enter in order to change it and this personality must appeal to the individual as being superior to himself and to his associates.

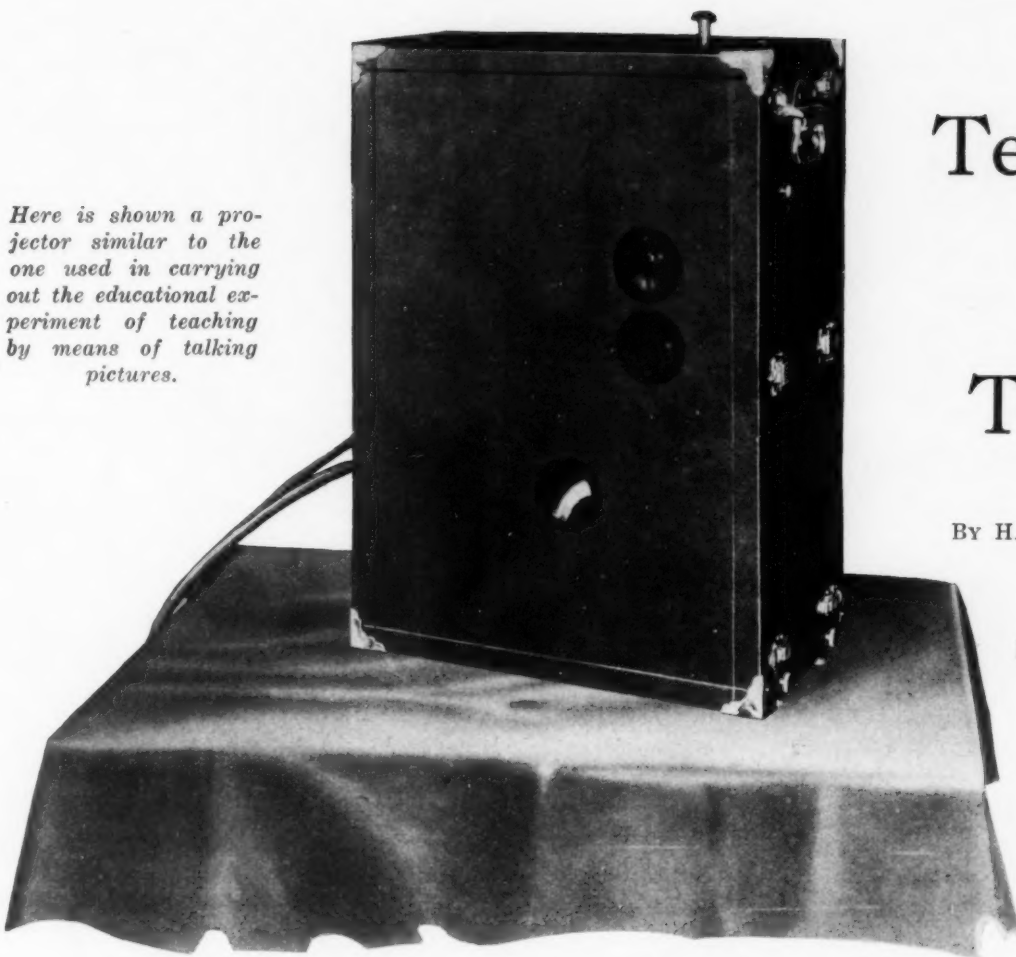
Every teacher ought to aspire to be a confessor to her pupils. Anyone who is reasonably keen in reading human nature can detect pupils in her classroom who are struggling with one or another of the mental problems that beset children as they approach puberty. Then, if she could woo the confidence of these children without their knowing it and could subtly draw them out of themselves, undoubtedly she could relieve them of strain and stress that otherwise might never be relieved. It is a fine art to lead a young person to reveal secrets that he has concealed from his parents and even from his companions, but it is worth while for a teacher to try to cultivate those qualities that gain the confidence of children so that the repressions that hold back the experiences that they ought to communicate may be lifted.

### Directing the Reading of Georgia School Children

Vacation reading among the school children of Georgia is encouraged by the Georgia State Library Commission which organizes reading clubs and supplies a list of twenty-five books suited to the age and grade of the pupils enrolled. A child may borrow two books at a time.

For reading ten books and giving a brief summary of them in a notebook supplied by the library, he receives a certificate. For reading all twenty-five of the books he is given a gold star certificate. Last summer 1,875 books were loaned. Of the 735 children enrolled in the reading clubs, 335 have received certificates. The plan has been in operation three years.

Here is shown a projector similar to the one used in carrying out the educational experiment of teaching by means of talking pictures.



# Teaching by Talkies

By HARRY D. KITSON,

PROFESSOR OF EDUCATION,

TEACHERS COLLEGE,

COLUMBIA UNIVERSITY

EARLY last Spring William Lewin, a graduate student at Columbia University, came to me with an interesting plan. Mr. Lewin had obtained a year's leave of absence from his duties in the Newark public schools for the purpose of making a special study of sound motion pictures as applied to visual education. His plan was to conduct a series of experiments at Teachers College to determine the reaction of prominent educators to this new medium of expression—the talkies. He asked me if I would cooperate in making a picture that would show how subjects might be taught more easily and impressively by talking motion pictures. He assured me that a distributor of talking picture apparatus would cooperate in furnishing the equipment necessary to this experiment.

## *Picture Shows Industrial Plants*

Through that company, in conjunction with a talking picture corporation, a picture was prepared in which the audience was taken through an automobile factory, a newspaper plant and a big rug mill. As each picture was shown, I explained its purpose and pointed out the important items for the students' consideration. Following the in-

dustrial scenes we introduced, through these talking pictures, world-famous personalities such as Lloyd George, Mussolini, Bernard Shaw, Sir Ernest Benn and President Hoover, permitting the students to see and hear leading figures in international affairs.

## *Audiences Approve Film*

This picture, two reels in length, was shown at Teachers College every afternoon for a week. The audience consisted for the most part of teachers, principals, professors, librarians and supervisors. Questionnaires were distributed asking their opinions as to the effectiveness of talking pictures as an educational aid. Eight performances were given in all, with a total attendance of approximately 1,500. So interesting and satisfactory were the results that Mr. Lewin decided to continue his experiment at as many of the leading summer schools in session throughout the country as possible.

Accordingly arrangements were made with the universities of Wisconsin, California, Southern California, Cornell, Indiana, Leland Stanford, Michigan, Kansas and Chicago. Arrangements were made with the distributors of the apparatus



to furnish the equipment and operators for these experiments. The equipment used was a portable sound system consisting of a projector, amplifier, horn and screen. This equipment was packed in four specially designed and wired trunks and transported from place to place with little trouble or inconvenience.

#### *Few Doubt Value of Pictures*

The results of the experiments at these eleven universities, most of which were in the Middle West and the Far West, are most interesting to the student of visual education or vocational guidance. Let us consider for a moment a few interesting statistics in connection with these experiments. Fifty-six showings were made to audiences approximating 6,700. Of those attending 2,537 turned in questionnaires. Of these 1,258 were teachers, 326 were principals of schools, 165 were professors, 352 were students, four were college presidents and the balance were librarians, deans, authors, editors, lawyers and critics. Of the total number of questionnaires, only 37 expressed doubt as to the value of talking motion pictures as an

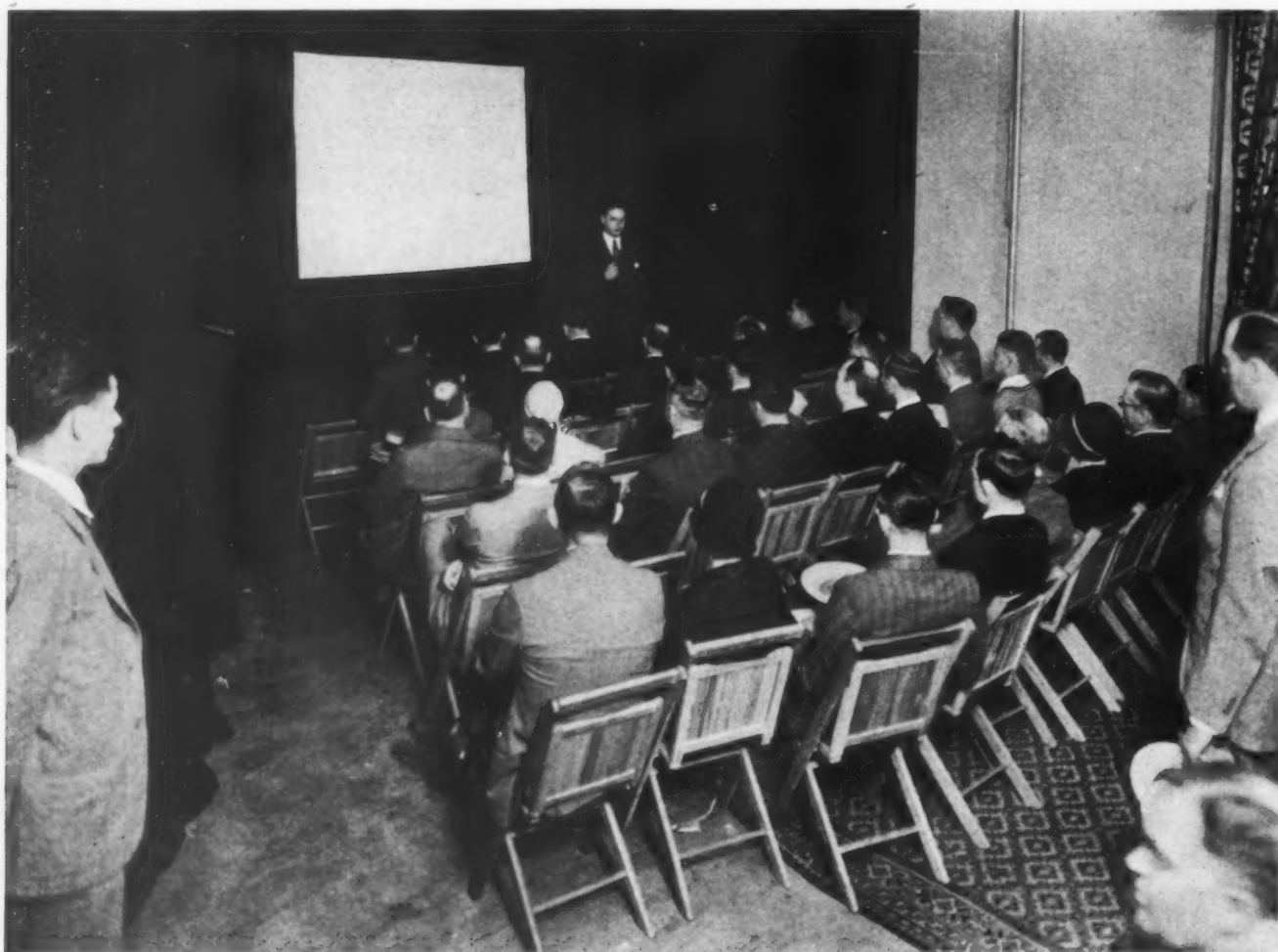
educational medium. Enthusiastic comments were made by 1,125.

The leading advantages of this new medium for education were given in the following order:

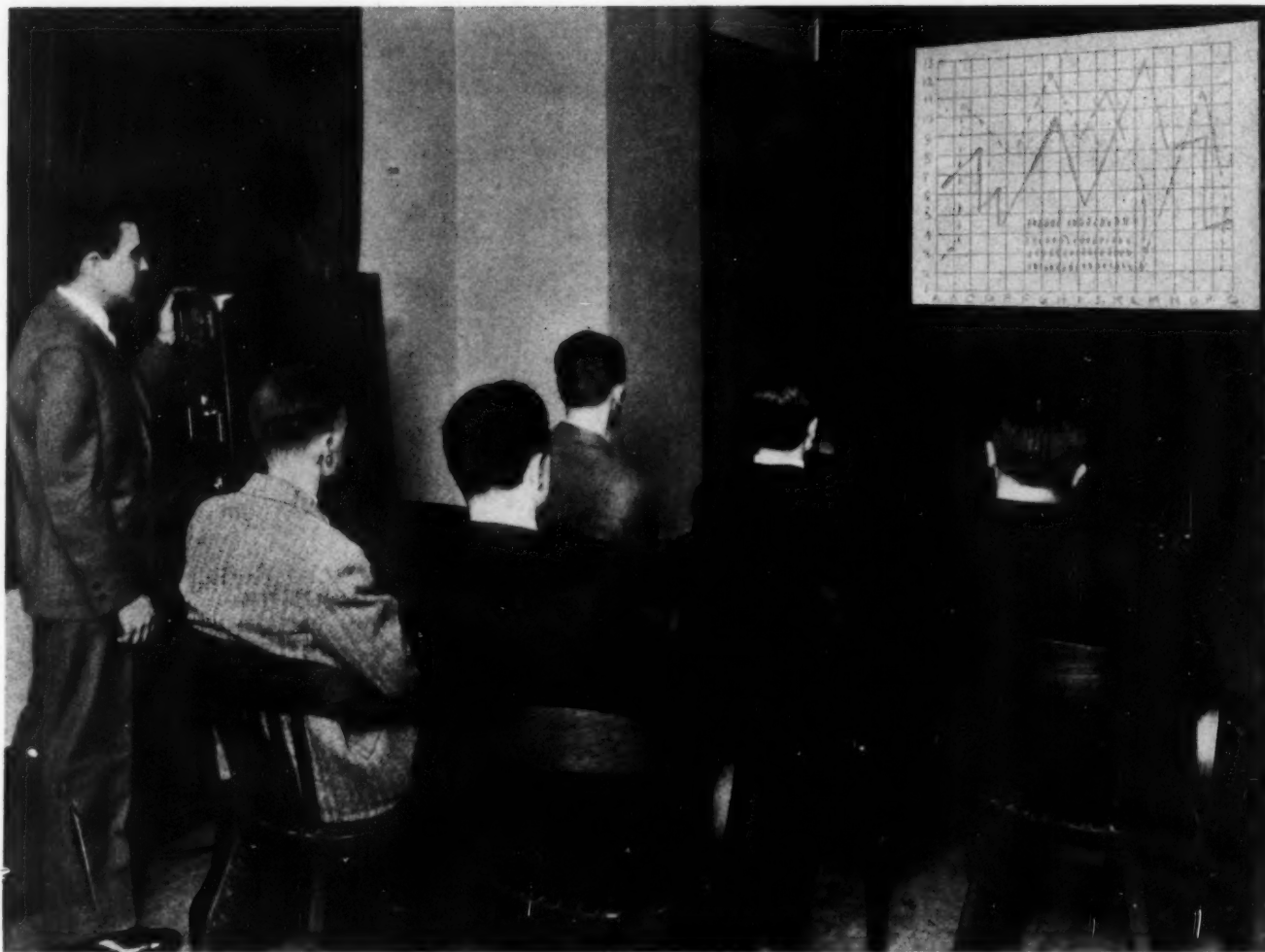
1. More stimulating and interesting.
2. Gives information otherwise unobtainable in classroom.
3. More realistic.
4. Excels in revealing personality.
5. Democratizes education.
6. More lasting impression.

#### *Aids Work of Teachers*

From my personal contact with the experiment, I would not for a moment predict that the talking picture is going to supplant the teacher but rather that it will intensify his efforts. Personal contact between teacher and pupil is most important; so, of course, are classroom discussions. However, it does seem that certain subjects can be presented in a much more interesting and impressive way than heretofore by the aid of this new medium. Furthermore, talking pictures will enable audiences who are scattered all over the coun-



*Many business executives have become interested in the possibilities of using educational talking pictures as a valuable aid in instructing and helping their office and sales staffs.*



A portable sound system such as is shown here may be set up in any room within a short time. The two cables shown are the only connections made between the projector and the amplifier.

try to see and hear leaders in world events and famous educators.

It may be interesting to note the comments of university newspapers where these experiments were held. In an editorial the Leland Stanford newspaper says:

*College Papers Enthusiastic*

"Education is about to take a long step forward. At a program last night, given to members of the faculty as a preview of the regularly scheduled presentation for to-day, an electric company showed its latest development—the educational talkie. Admittedly an experiment, this innovation seems destined to change in no small measure the educational methods in vogue to-day. College professors will have their delicate methods of research preserved for countless observers. Small country grammar and high schools will have skilled methods of instruction brought to their very doorsteps . . . visual education will find its most fertile home in the lines of scientific work. Chemistry, physics, geology, biology, medicine, geography, are studies in which this new method of

instruction will be of the greatest aid. The social sciences—history, political science, economics, world commerce—likewise will be benefited."

The University of Indiana's newspaper remarks:

"Talking films are expected to be particularly valuable in vocational guidance courses where they will provide all the sensations of an actual visit to manufacturing plants without the disadvantage and expense of a long observation tour. The problem of imparting information in this field is simplified because with the film of the people at work, a running commentary from the teacher may be used to explain the various processes."

*Development Depends Upon Cooperation*

The speed with which talkies develop in the educational field depends in my opinion upon to what extent educators and producers of film will mutually cooperate. School systems and other educational institutions undoubtedly will install sound projection apparatus in order to be in a position to show the latest educational sound pictures. Producers will develop the new pictures as rapid-

ly as a reasonable outlet is apparent. The two fields must develop more or less simultaneously and with complete mutual understanding.

As is always the case in new pioneering enterprises, a few organizations will take the initiative, both in the preparation of suitable film and in the installation of apparatus. I believe that during the coming college year several of the leading universities will have talking picture apparatus in use and will themselves prepare a certain amount of film for visual education work.

The sound motion picture presents advantages over the old silent type which are indisputable. As much can be condensed into one reel of sound film as formerly was required by three reels of silent, at no more cost. Furthermore, voice and music and sound effects are great forces in creating attention value. Also, the sound picture is more realistic. Development in the recording and production of sound motion pictures has been most rapid and gratifying. I believe they are going to be of great service to educators. Certainly they are worthy of a great deal of consideration.

### A Plan for a Model System of Taxation

The waging of a nationwide campaign for new and better methods of raising money for education is advocated by Dr. E. E. Lewis, head of the department of school administration at Ohio State University in a recent article in *School Executives Magazine*.

"Everywhere but in America the general property tax is being abolished," Doctor Lewis says. "Authorities agree that sooner or later it will be abolished in America or at least modified. The report of the National Tax Association Committee agrees upon certain principles for state guidance. These should constitute the basis upon which a unified system of state and local taxes is founded. Certain conditions and requirements are to be met by any proposed system of state and local taxation. The system must:

"Yield the large revenues required by state and local governments at the present time.

"Be practicable from an administrative standpoint, administrable by such means and agencies as the states have at their command or can reasonably provide.

"Be adapted to a country with a federal form of government, reconciling the diverse claims of the several states, which now conflict at many points, thereby producing unjust multiplication and disregard for interstate comity.

"Respect existing constitutional limitations,

federal and state, or else point to practicable methods of constitutional amendment.

"Represent as nearly as possible a general consensus, giving careful consideration to the most influential body of opinion developed and formulated by the National Tax Association.

"Not propose measures wholly foreign to American experience and contrary to the ideas of the American people.

"Methods of raising money under a model taxation system were set forth by the committee," Doctor Lewis concludes. "These include a personal income tax, a tax upon tangible property, a business tax, an inheritance tax and taxes on luxuries."

### More Grown Ups Are Going to School

The number of grown people going to school last year, says the United States Bureau of Education, increased 30 per cent over the number that had registered for class work the year before. In 1926-1927, 200,000 adults were enrolled and that number increased in 1927-1928 to 260,000.

Youth has no advantage in learning over maturity, the bureau further states. It is inclined to believe, in fact, that when a man of 45 and a youth of 20 are set to wrestle with any problem that constitutes an element in education, the older man, because of his experience and judgment, will more thoroughly master it. The psychologists have been saying just this. The fact that they have done so has greatly stimulated expectations as to what may be accomplished.

As the attendance of parents in schools for adult education increases it has been found that the attendance in day schools also increases. The interest on the part of parents to gain education inspires them to greater effort to keep their children in school.

The question of what the American worker would do with his increased leisure has been one upon which there has been little actual information. The bureau believes, however, that the increased attendance in adult schools is largely due to increased leisure and believes that it is an indication that such leisure will be to a considerable degree used for study. When men are free from the necessity of putting forth all their efforts for immediate objectives, it holds, they begin to think of more remote and ultimate objectives. The efforts to discover these ultimate objectives and to adjust one's life in harmony with them is what some people have in mind when they speak of adult education.



# Does the High-School Teacher Do Too Much Clerical Work?

*Seventy-nine teachers from high schools of more than 1,200 enrollment are far from being in agreement as to the extent of their clerical burdens, this study shows*

By L. A. WAEHLER, MADISON, WIS.

IN VIEW of the increasing size of high schools and the growing demand for more complete systems of record keeping, classroom teachers are expressing themselves on the subject of the increasing clerical burden incident to teaching while administrators have begun to ponder the economic question of cost efficiency involved. The investigation discussed in this report was made for the purpose of learning whether or not it was possible to obtain definite facts relative to the so-called clerical burden of the classroom teacher and whether or not such facts warrant a change from the traditional composition of the teacher's work schedule.

## *Schools Canvassed for Information*

Questionnaires were sent to approximately 250 classroom teachers in some thirty-five representative city high schools of Wisconsin, Illinois, Iowa and Minnesota. Schools carrying on large programs of experimental methods either in pedagogy or in administration were omitted purposely from this survey because of the likelihood of a disproportionate clerical demand or of an unusually large clerical staff. The ratio of returns was not gratifying, barely 35 per cent. In order to have fairly comparative conditions, only the data secured from high schools of more than 1,200 enrollment were considered. This report, therefore, involves the contributions of seventy-nine teachers from eleven large high schools.

It had been hoped that a comparison of reports from the smaller city high schools—from 200 to 300 enrollment—with those of the larger high schools—those with more than 1,000 enrollment—might offer a significant set of results. Because there were so few returns from the smaller schools such a comparison was abandoned. The insufficiently supported summaries, however, indicate possibly that the proportion of time spent in clerical work by the teacher of the small school is greater than that spent by the teacher in the larger school. This was corroborated by the

statement of opinion of several of the teachers answering from the larger schools, teachers who had had experience in the small schools.

Other problems it was hoped this survey would clarify were:

Is the so-called "burden of clerical work" a general condition, or is it a condition peculiar to certain schools?

What is the normal clerical load of the average classroom teacher in the modern large high school operating along fairly conservative lines?

Which if any of the clerical duties of the classroom teacher are of a nature that would permit them to be shifted to a trained clerical worker?

Is the element of cost important?

In the opinion of the teacher herself does good teaching require the immediate and direct contact of teacher and pupil in this clerical aspect of her work?

Evidently the condition is not peculiar to a

TABLE I—THE RANGE OF NORMAL HOURS PER WEEK DEVOTED TO CLERICAL WORK BY TEACHERS IN ELEVEN HIGH SCHOOLS OF MORE THAN 1,200 ENROLLMENT

School	Minimum	Maximum
A	1½	7
B	7	7
C	1	8
D	1½	10
E	0	11½
F	1½	11½
G	1½	15
H	1½	15
I	8	15
J	1½	20
K	0	21

Note: In several instances the statement "very little" was interpreted as one-half hour. The two teachers who reported zero hours both listed under question No. 2 several items of clerical work that could be performed by workers other than teachers and indicated that in their school it was being so performed.

school or a locality. The eleven high schools reporting from widely separated parts of Wisconsin and Illinois have been labeled in Table I. Teachers were asked to state the number of hours per week devoted by them to clerical work incident to their teaching work. They were not to count special or extra-curricular activities assigned to them.

By glancing down the "maximum" column in Table I it is seen that clerical duties in all the schools reporting involved seven or more hours per week. In all but three they involved from ten to twenty-one hours per week, from two to four hours a day, with a median average of eleven and one-half hours per week.

All of this is somewhat invalidated by the tremendous range within schools as the table indicates. One or two teachers in a school like A or K may say, "We do not have clerical work, not enough to mention, at K High School," while one or two others in the same school will say, "We spend about eleven and one-half hours a week in clerical work" or, "twenty-one hours a week," even.

Any attempt to set up graphically the reports of the seventy-nine teachers with reference to the normal number of hours devoted to incidental clerical duties each week would bring a result unrecognizably divergent from the orthodox normal frequency curve. Table II shows the tendency or the lack of tendency of these reports to group themselves about some common interval of time. Teachers reporting evidently are far from being in agreement as to the extent of the clerical burden.

#### *Pupils Assist in Clerical Work*

Table II does reveal a median of five hours per week, within a range of reports extending from zero hours to twenty-one hours, although twelve reports indicated one hour or less of required clerical time. The table does not give an entirely accurate portrayal of the situation due to a miscalculation in the statement in the questionnaire. Some teachers apparently have at least partially solved the problem of clerical time either by a system of pupil monitors or secretaries or by a system of commercial department cooperation. It was clear that some of these teachers, when asked to give "the number of hours weekly required of you in clerical duties incident to the teaching of your classes," did not include the number of hours saved to them by one or the other of the two systems mentioned. For instance, one man reported less than an hour per week devoted to clerical duties and attached a newspaper clipping in which he had outlined an elaborate and somewhat

indefensible system of "class secretaries" who kept a time record of their work. To quote the clipping: "The second month the time cards for the five classes added up to the astonishing total of twenty-five hours and the teacher realized what a wearisome burden he had removed from his poor shoulders without the least impairment of his work but rather to its definite advantage." Several others, reporting little or no time involved

TABLE II—RANGE AND FREQUENCY OF TIME PERIODS DEVOTED TO CLERICAL DUTIES INCIDENT TO TEACHING\*

<i>Number Reporting</i>	<i>Hours per Week</i>
1	No mention
1	0
8	$\frac{1}{2}$
3	1
4	$1\frac{1}{2}$
4	2
4	$2\frac{1}{2}$
2	3
3	$3\frac{1}{2}$
5	4
1	$4\frac{1}{2}$
4	5
4	$5\frac{1}{2}$
4	6
1	$6\frac{1}{2}$
5	7
1	$7\frac{1}{2}$
4	8
1	$8\frac{1}{2}$
1	9
0	$9\frac{1}{2}$
5	10
0	$10\frac{1}{2}$
1	11
2	$11\frac{1}{2}$
1	12
1	$12\frac{1}{2}$
0	13
0	$13\frac{1}{2}$
0	14
0	$14\frac{1}{2}$
4	15
..	..
1	18
1	$18\frac{1}{2}$
1	20
1	21

\*Of the seventy-nine teachers reporting, twelve reported less than  $1\frac{1}{2}$  hours per week, fifty-three reported more than 3 hours per week, forty reported 5 hours or less per week, and thirty-nine reported more than 5 hours per week.

in such duties, then proceeded to list a number of such duties that could profitably be divorced from the actual work of teaching, thus implying that they had evolved their own system of provision.

The correction of these discrepancies, however, would mean, if anything, an upward revision of the median. Consequently we may be fairly safe in accepting the present median indicating five hours per week as a normal period of time that teachers must give to clerical duties incident to their teaching work unless there is devised some arrangement for shifting a part or all of these duties from the teacher.

The question then was, "Can you specify definite clerical duties incident to your work as a classroom teacher which you believe could be divorced from your work as a teacher without impairing the present efficiency of your teaching, with the assumption that the work be done by a clerk instead?" And again, "Please list the clerical duties incident to your work as a teacher which you believe in their very nature require that they be done by the teacher for the sake of good teaching results." As a check on the first two statements the following was asked, "Please list clerical duties which you believe occupy a middle ground between the two extremes suggested in No. 2 and No. 3 that might under certain conditions or might in part be divorced from the actual work of teaching." In other words, here was a problem of seeing whether or not any of this clerical work was of a nature to permit its being shifted with a view to reducing the teacher's load as well as to increasing the cost efficiency of the system. This involved also a definite statement of distinct clerical duties.

#### *List "Shiftable" Duties*

Again we were far from securing a unanimity of opinion. Tables III, IV, V and VI show the results. Each table is self-explanatory. Taking the roll, recording grades, keeping records for home room, typewriting and mimeographing assignments and tests, and tabulating and graphing grades, absences and other data were among the duties most frequently mentioned as being "shiftable." Marking report cards, marking some types of tests and quizzes, marking papers, reports, themes and contracts, transferring grades to permanent office records and signing permits were among those less frequently mentioned. One facetiously included questionnaires in his list of "shiftable" duties.

In the list of clerical duties that cannot be shifted (see Table IV) marking reports, themes, contracts and other similar papers were mentioned thirty-three times.

In Table VI we have attempted to give a comparative view in order to illustrate the variance

TABLE III—CLERICAL DUTIES THAT CAN BE SHIFTED FROM THE TEACHER TO AN OFFICE CLERK WITHOUT IMPAIRING THE EFFICIENCY OF THE TEACHING PROCEDURE

<i>Duty</i>	<i>Times Reported</i>
Taking roll (attendance).....	27
Recording grades .....	20
Records in supervising and advising home room .....	17
Mimeographing, stencil cutting, typing .....	14
Filling in report cards.....	13
Marking tests and quizzes (some types) .....	11
Grade record sheets.....	11
Marking papers, reports, themes, contracts, etc. ....	10
Transferring grades to permanent office records .....	10
Reports to office.....	10
None .....	9
Preparing lists of names.....	8
Tabulating and graphing grades, absence, etc. ....	8
Supervising study hall movement, slips, etc. ....	8
Averaging grades .....	6
Making out report cards, with names, room, etc. ....	6
Signing slips .....	5
Making out pass and fail slips.....	5
Sorting materials, papers and cards.	4
Tabulating recurring errors.....	4
Keeping records of reference books..	4
Reading announcements .....	4
Checking up delinquents and deficients .....	3
Collecting papers to be handed in...	2
Banking .....	2
Keeping record and file of materials, themes, etc. ....	2
Compiling research data.....	1
Blackboard assignments .....	1
Checking invoices .....	1
Questionnaires .....	1
Preparing class work.....	1
Preparing examinations .....	1
Addressing envelopes .....	1
Making out course cards.....	1
Special disciplinary records.....	1



TABLE IV—CLERICAL DUTIES THAT FOR THE  
SAKE OF GOOD TEACHING MUST BE  
PERFORMED BY THE TEACHER

<i>Duty</i>	<i>Times Reported</i>
Marking reports, themes, papers, etc.	33
Making out grades (estimating grades) .....	29
Records .....	21
Marking some tests .....	18
Checking attendance .....	15
Marking report cards .....	10
Preparing abstracts and outlining work (plans) .....	10
Compiling and constructing tests and examinations .....	9
Signing slips, excuse, library, corri- dor, etc. ....	6
Helping delinquents and deficient...	9
Correcting notebooks .....	4
Supervising home rooms .....	4
Correcting work done .....	3
Marking all tests .....	3
Tabulating grades of classes .....	2
Hall supervision .....	2
Advising in planning of pupil pro- grams .....	2
Making reports to supervisors .....	1
Supervising of subject study rooms.	1
Supervising class activities .....	1
Preparing seating arrangements .....	1
Planning adviser schedules .....	1
Analyzing report card grades .....	1
Making special reports to parents ..	1
Checking home work .....	1
Checking laboratory work .....	1
Making inventory, budget, and requi- sition lists .....	1
Checking up laboratory materials ..	1
None .....	1
All .....	1
Blank .....	4

of judgment with regard to some of these definite clerical duties. It is to be noted that only in the matter of checking attendance and in that of tabulating and graphing records is there any comparatively predominant showing. The results shown in this table represent one of the surprises of the survey.

It is interesting to notice also that ten teachers, either by a negative answer to the question of the first column or by a positive answer to the question of the second column, were explicit in their statement that the clerical duties that have

grown up incident to teaching work cannot be shifted but by their very nature require that they be done by the teacher herself. "Grading of papers and projects where care, neatness, completeness and judgment are the chief items, must be done by the teacher," says one. Another believes there should be no shifting because of "the splendid contact" involved in such work. Still another, a teacher of language, says that in her subject there is an excessive amount of reading and marking papers but that "there is no practicable escape from such duties." One points out that much of this work involves individual problems which "require intelligent and sympathetic understanding and that the adviser, the teacher, is supposed to be able to give this tactfully and forcefully." These are supported in a rather un-

TABLE V—MIDDLE GROUND CLERICAL DUTIES  
THAT MIGHT UNDER SOME CONDITIONS  
BE DIVORCED FROM THE ACTUAL  
WORK OF TEACHING

<i>Duty</i>	<i>Times Reported</i>
Blank .....	29
Checking some tests .....	12
Recording grades .....	9
Checking papers (some) .....	9
None .....	9
Making reports to office .....	8
Checking study hall attendance and movement .....	6
Taking roll (attendance) .....	6
Averaging grades .....	4
Home room adviser records (all work) .....	3
Marking report cards .....	3
Signing slips, excuse, library, etc. ....	3
Arranging bulletin board display .....	2
Compiling and tabulating grades .....	2
Giving out corrected papers .....	2
Correspondence .....	1
"Varies with times" .....	1
Reading and checking drill exercises	1
Reading daily announcements and orders .....	1
Compiling test material .....	1
Checking delinquents and deficient...	1
Study room supervision .....	1
Making estimate sheets .....	1
Planning pupils' courses of study and recording plan on cards .....	1
Receiving deposits of money (bank- ing) .....	1
Inventory and requisition work .....	1

usual way by one who reports 11½ hours a week given over to clerical duties but who believes that to him personally the clerical work connected with teaching is no burden at all. "In fact, I rather enjoy it," he says.

A number objected to the plan of taking a normal week as the basis for estimating time

TABLE VI—VARIATION OF TEACHERS' OPINIONS CONCERNING WHETHER OR NOT CERTAIN CLERICAL DUTIES MAY BE SEPARATED FROM THE OTHER WORK OF THE TEACHER

	<i>Separable</i> <sup>1</sup>	<i>Inherent</i> <sup>2</sup>	<i>Middle Ground</i> <sup>3</sup>
Checking attendance.27	15	6	
None . . . . . 9	1	9	
All . . . . .	1	..	
Blank . . . . . 4	4	29	
Marking reports, papers, etc. . . . .10	33	9	
Marking some tests.11	18	12	
Marking all tests . . . .	3	..	
Recording grades . . .20	21	9	
Marking report cards.13	10	3	
Signing slips, permits, etc. . . . . 5	6	3	
Tabulating and graphing records . . . . . 8	2	2	
Averaging grades . . 6	..	4	
Checking up deficient and delinquents . . 3	5	1	

<sup>1</sup> Separable: Teacher believes clerical duty incident to her work could be divorced from it and done by an office clerk instead without impairing present teaching values and efficiency.

<sup>2</sup> Inherent: Teacher believes that clerical duty in its very nature requires that it be done by the teacher for the sake of good teaching results and not by someone else.

<sup>3</sup> Middle Ground: Teacher believes that clerical work might under certain conditions be separated partly or wholly from her teaching duties.

spent on clerical duties, insisting that the real burden lies at the beginning and end of the semester. Several suggested that extra-curricular activities rather than clerical duties were the crux of the teacher load problem.

Thus, contrary to the original expectations, this study could not reveal a clearly defined teacher burden consisting of a definite list of clerical duties through the shifting of some of which there could be offered a considerable measure of relief to teachers. It is apparent that such relief would make it possible for the teacher to do better the work for which she is specifically trained and on the basis of which she is paid. It is probably equally apparent that from the point of view of cost efficiency, if the "shiftable" clerical duties could be definitely circumscribed with sufficient certainty and in sufficient amount, it would be both wise and efficient to shift them to

a properly trained clerical force, the market value of whose time and effort is but one-half that of the teacher's, just as it would be highly wasteful to accept the plan making clearly independent clerical duties a part of the teacher's work.

As the principles of large scale operations and of efficiency grow more and more applicable to the school as well as to industry this problem becomes a difficult one to solve. Records and more records—records of age, growth, intelligence, accomplishment, progress, of methods and results, of materials and costs—are demanded both by scientific educational philosophy and by the more homely but fully as vital philosophy of the tax-paying public. Possibly the tradition that everything incident to the teaching work must be done by the teacher if it is to be well done and worth while calls for a program that will educate the teacher away from this tradition and at the same time train an entirely new group of intelligent clerical assistants.

### The Severance Tax as a Means of School Support

Ten states so far have adopted severance taxes of varying kinds and amounts, a research article in the *Sierra Educational News* points out. Five of the ten devote the income from such taxes wholly or partly to the support of public education. Of these five, Kentucky levies upon oil production, Montana and Oklahoma levy upon all kinds of minerals including oil and natural gas and Arkansas and Louisiana upon all natural resources severed from the soil. The tax varies from 1 per cent to 3 per cent of the gross market value of the product taxed.

According to the article, the severance tax might better be called a state royalty since it places upon the producers of natural products the obligation to return to the state a portion of the value of the severed commodities. Natural resources are interpreted for this purpose to include gas and oil, mining and quarry products and other forms of valuable deposits, and virgin timber. Agricultural products are exempted from this form of taxation.

The article further says that the severance tax is based on the theory that such commodities belong to all the people and that, although they have been allowed to pass into private hands for the purpose of exploitation and production, they remain a part of the patrimony of the state. The state is justified in demanding that a portion of such wealth be used to benefit the general public.

# Health Service in Normal Schools and Teachers' Colleges

*That teacher-training institutions are more and more recognizing the relation of the teacher's physical fitness to her efficiency and success in the classroom is shown by this study*

BY A. O. DEWEESE, M.D., DIRECTOR OF HEALTH, KENT STATE NORMAL COLLEGE, KENT, OHIO

GOOD health and physical fitness comparatively speaking are more important to the classroom teacher than to the individual in almost any other profession or occupation.

Industrial and commercial concerns are interested in the health and physical fitness of those they employ, because they are interested in the conservation of time and money spent in training employees, in protecting themselves from having to pay industrial compensation and in the efficiency of the individual employee. Colleges, universities and professional schools are interested in the health and physical fitness of the student because they realize that it is an important factor in success and in the development of character and personality. They feel that it is as much the duty of the school to develop the health and physical fitness of the student as it is to promote his mental attainments.

## *Important Factor in Training*

Teacher-training institutions should be interested in all these factors and more. They should select students who are physically fit in order to reduce the expenditure of time and money in training teachers. They should be interested in protecting the school unit from loss of time and disability compensation resulting from the teacher's lack of health and physical fitness. It is, however, in the relation of the teacher's health to her physical fitness and efficiency that teacher-training institutions must realize that they have a unique, special and specific problem.

The classroom teacher must be interested in the physical as well as the mental development of her pupils. It is she who produces the incentive that inspires children to strive to become physically perfect and to keep their bodies strong, healthy and useful. It is needless to say that in dealing with immature minds, she cannot do this unless she, herself, is in splendid physical condition. Those things in nature that have developed as nature intended them to develop, those things

that are healthy and useful give us joy and pleasure and satisfy our sense of beauty. On the other hand, those things that have not developed as nature intended them to develop, the misfits of nature, are sordid and depressing. Surely the children of our public schools deserve to be protected from the unhealthy sordidness and depression that characterize the physically unfit teacher.

The healthy boy or girl is active, vigorous and outdoor minded. The teacher who is not active, vigorous and outdoor minded cannot understand and sympathize with the normal, healthy child. More than that she cannot be the enthusiastic leader of children in their childhood sports and games. In many localities in America the traditional custom of training for the teaching profession young men and young women who are not physically fit for other occupations must be challenged. That teacher-training institutions are conscious of their responsibility and are measuring up to it, is shown in this study of their activities.

For this study 100 strictly teacher-training institutions, city-normal, state-normal and teachers' colleges were selected at random from the United States Educational Directory as representative of various sections of the United States. From this selection it was possible to make a reliable study of fifty schools. These fifty were well scattered over the country in thirty-three different states.

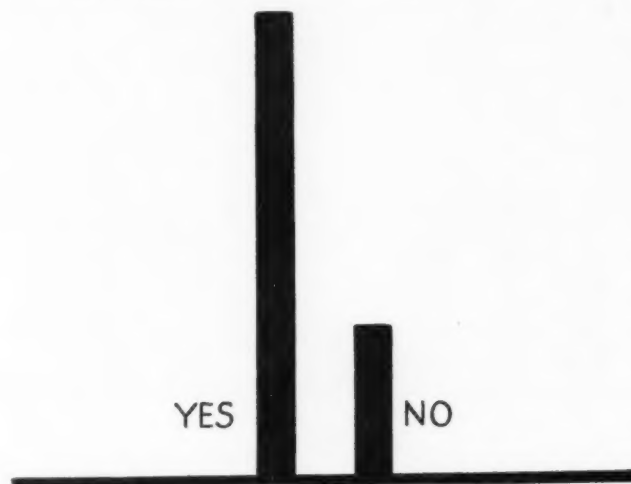
## *Many Schools Require Examinations*

Seventy-six per cent of the institutions studied require of the student a thorough health examination on entrance. Only twelve institutions do not require it. Nine of these are from the Southern states. Six per cent of the teacher-training institutions not giving a complete health examination give a partial examination. In other words, only nine of the institutions studied fail to give a complete or partial health examination. The relative percentages are shown in Graph 1.



A committee of medical men last year reported a study of 131 colleges and universities. It was found that 64 per cent of the schools require a thorough examination. Strictly teacher-training institutions make a better showing in this regard.

It is obvious that the value of the health exam-



Graph 1.

ination depends in a measure upon follow-up and subsequent examinations. Eighty-two per cent of the teacher-training institutions follow up the entrance examinations with such subsequent examinations as may be indicated. See Graph 2.

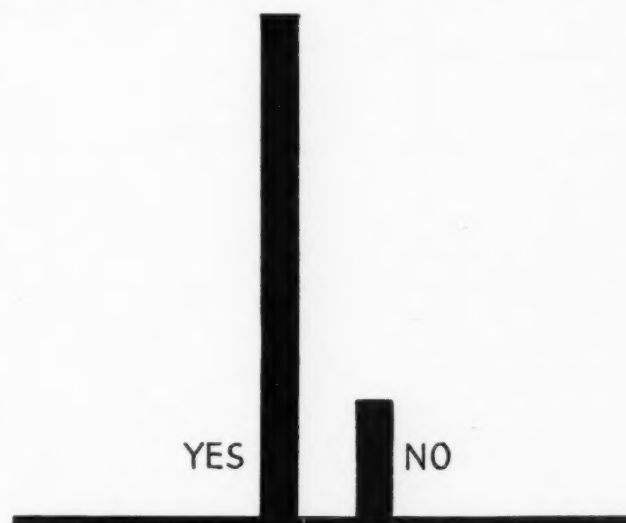
The personal value to be derived by the prospective teacher from such a health examination is obviously the same as it would be for any other individual. In addition, however, the health examination of the teacher has an increased educational value. She must be informed and interested in a similar examination for her pupils. She must become the individual to whom is delegated the task of educating the general public with regard to the value and importance of an annual health examination. In her case, then, it is essential that the examination be made by one who makes a specialty of this work and who understands its educational background. That teacher-training institutions are meeting this problem is shown by the fact that in 62 per cent of those studied, the health examination is given by the college physician, in 12 per cent by local physicians, in 2 per cent by family doctors and in 4 per cent by physical education departments. Graph 3 illustrates this.

Competent medical and health advice for a teacher-training student is an important educational factor and is one that deserves more attention than it has had from medical societies and organizations. Several experiences in connection with teacher-training institutions tend to prove the truth of this. In one institution with an en-

rollment of 1,000 teacher-training students, numerous publications on osteopathy, New Thought and the like were found on the reference shelves of the library. All, of course, had been contributed. Medical science was not represented. In the graduating class of another institution was a young woman who during her four years of college life had been contributing regularly to a magnetic healer who was treating her for a tuberculous hip. In still another institution a nurse in charge of the dormitories was calling in regularly a cult practitioner to treat medical cases.

A teacher-training student was assigned for review a book by an eminent author on methods of teaching hygiene and health. The student brought in an absurd statement given as a scientific truth, the pseudoscientific premise of a well known cult. When asked where she obtained it, she contended it was in the reference. She produced the book and it was reported to the secretary of the American Medical Association. In a letter from the author, he said that the statement had been inserted without his knowledge and that the copies would be called in and corrections made. The book, however, had gone through one edition and thousands of teachers had used them. This shows to what an extent cults will go to reach the public through that most potent educational factor, the public-school teacher.

In one school the individual who had charge of all health supervision was a Christian Scien-



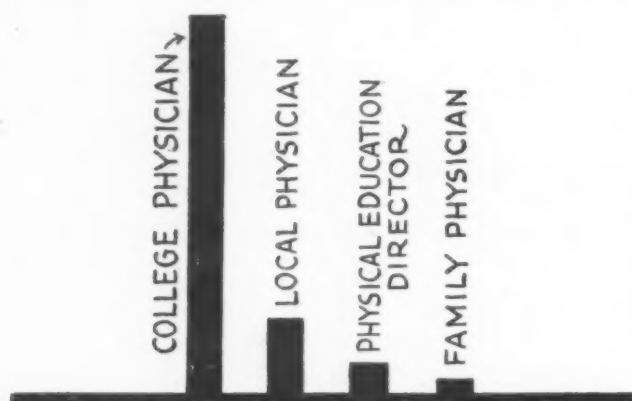
Graph 2.

tist. In another a chiropractor in the physical education department exhibited his powers. In one normal school during a smallpox epidemic many teachers quit school rather than submit to vaccination.

In 18 per cent of the fifty representative teacher-training institutions studied, no provi-

sions were made for medical and health advice; in 30 per cent some advice was given by the college physician; in 24 per cent some advice was given by the college physician and school nurse; in 8 per cent no advice was given except by the nurse; in 8 per cent some advice was given by the examining physician and by the physical education teacher; in 6 per cent of the schools advice was given by the physical education teacher and the local physicians and in 2 per cent by the nutrition classes. This is illustrated by Graph 4.

Two things are obvious. First, the casual medical and health advice that the cases cited here indicate is doubtless very inefficient. Second, if this service is to be worth while, regular consultation hours must be provided. That teacher-training institutions have not as yet met this condition is shown in Graph 5. Only 53 per cent of the teacher-training institutions have regular hours for consultation. The number of hours per week given to such service in the institutions providing it range from one hour to forty hours per week with an average of eight and one-half

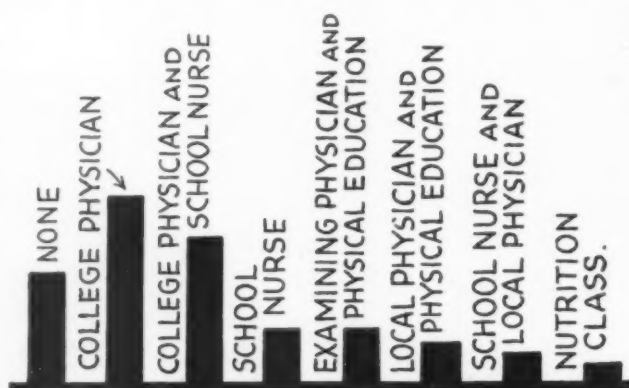


Graph 3.

hours per week. A most unsatisfactory arrangement seems to be that in which students call at the regular office of some local physician. The service in such cases was little used and was furthest from a helpful, educational health program.

A part-time physician having regular hours at the college office was in most cases fairly satisfactory. The students apparently grew to consider the service as a part of the educational program and a part of the campus activities. The most satisfactory arrangement was in those cases in which the physician gave all of his time to the college. Such a physician also taught several classes in addition to directing the health activities of the school. In all cases, the value of the service appeared to depend upon the training and aptitude of the physician for health education activities.

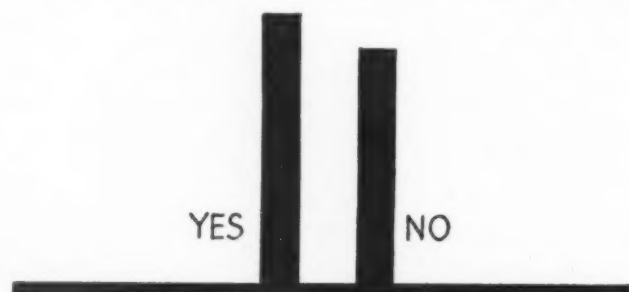
There is, after all, quite a difference between a medical examination and a health examination. Although the findings and technique are the same, the standpoint from which they are presented, used and studied with young people must be materially different. One normal-school pres-



Graph 4.

ident expressed it by saying, "We were a long time in finding a college physician who was more interested in searching for health than for disease."

It is generally assumed that the responsibility for correction of remediable defects rests with the student. In the study made, no provisions for the correction of remediable defects were made by the schools in 42 per cent of the cases; none, except through physical education, in 32 per cent of cases; none, except what could be done by the college physician, in 12 per cent of cases. Two schools were associated with other departments so that they had clinic services. One school charged a health fee to cover the corrections that were made by physicians outside of the school. Such a procedure as the last would seem to be unfair to the student who had paid

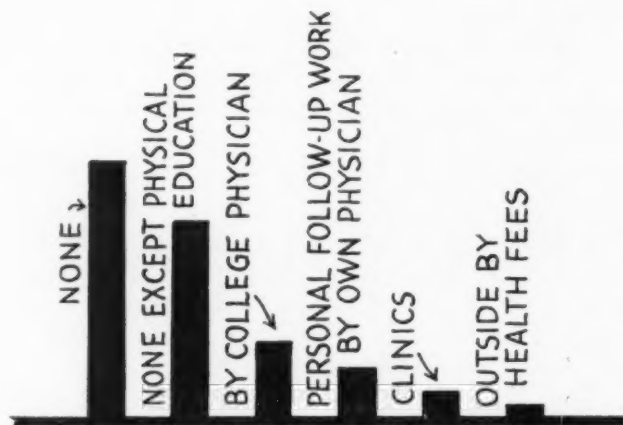


Graph 5.

for such corrections before she entered school. Graph 6 illustrates this.

It is obvious that the student health service will fall short in its efforts to promote a healthier and more physically fit group of teachers unless provisions are made to stimulate the

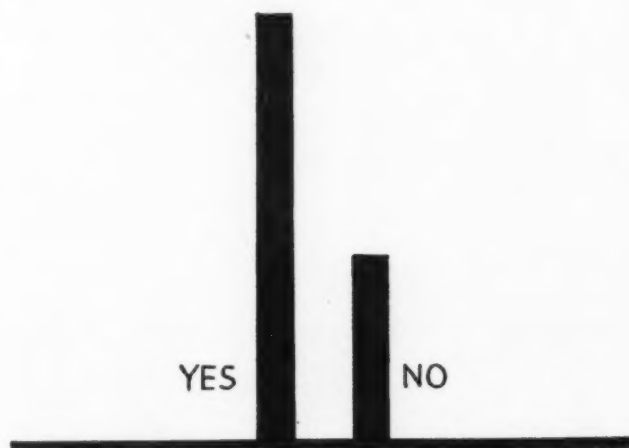
student to do all that she can to improve her physical condition. That teacher-training institutions are solving this problem is shown in the study indicated in Graph 7. In 70 per cent of the schools students are excluded from teacher-



Graph 6.

training courses or are denied teacher-training diplomas until corrections of remediable defects are made. In 6 per cent of the schools, students with defects are not admitted. In 76 per cent of the schools, therefore, students are not allowed to fit themselves for teachers until correction of remediable defects are made. This tendency is one of the most hopeful signs found in this study.

If teachers are to be efficient as teachers and as leaders in health education they must be health minded. That they are health minded will be shown throughout their training career in their attitude and in their conduct toward scientific health factors. If they are to be equally as re-



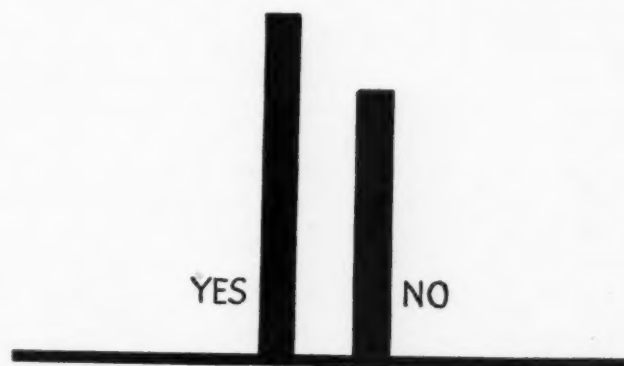
Graph 7.

sponsible for the development of physical fitness and health as they are for the mental training of the children intrusted to their care, this factor should be taken into consideration in the training school's recommendation for professional posi-

tions. Graph 8 indicates that 56 per cent of the teacher-training institutions make this a basis for recommendation for professional positions.

It is evident that the health condition of the teacher is a most vital factor in her efficiency and in the service she renders to the public schools. This factor then should be shown in her final grades and school records. Graph 9 indicates that this is true in only 36 per cent of the cases studied.

Plays and games in the open air have long been recognized as a vitally important factor in the training and development of children. It is now generally recognized that they have an important educational value aside from their relation to the physical and health development of the child. If the teacher is to be able to use this educational factor, her training in this line must be as sound as her training in English or in arithmetic. If she is to be a helpful leader of normal, healthy boys and girls, she must have the spirit of play



Graph 8.

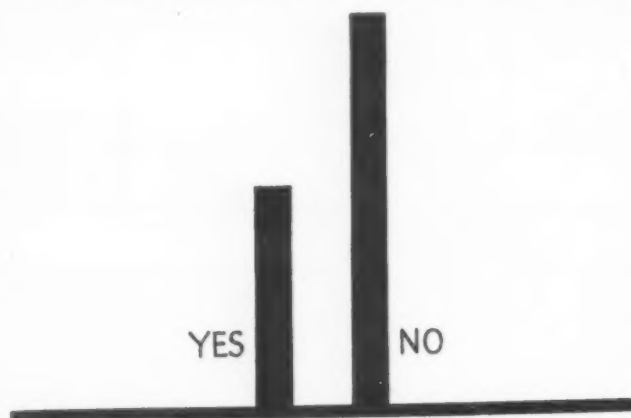
and must be enthusiastically outdoor minded. Courses in physical education, therefore, are of more significance for teacher-training students than they are for the regular college student.

That teacher-training institutions are not wholly cognizant of this fact is shown in the study represented by Graph 10. Sixty per cent of the schools studied excuse students from the regular courses in physical education because of physical and health disabilities. The percentage of the number excused ranges from 25 per cent to 1½ per cent, with an average of 4 per cent. There seems to be no more reason for excusing the teacher-training student from this work because of her inability to master it than there would be for excusing her from English, history or mathematics because of her inability to master the subject matter. The hopeful sign is that there is a growing tendency on the part of the schools to refuse to grant excuses for absence from physical education courses designed for teachers.

One of the most discouraging things brought



out in this study was the dearth of basic sciences in the training courses for teachers. It is difficult to see how a teacher could have a scientific attitude toward health and health education, or toward anything else unless she has some knowl-



Graph 9.

edge of the basic sciences. The number of term hours in service required in the elementary training courses studied ranged from two hours to fifty-six hours with an average of fourteen term hours. For secondary teacher-training courses it ranged from four to forty-eight term hours with an average of sixteen term hours.

In recommending a set of standards in student health service for teacher-training institutions the three following factors have been noted:

1. The limited finances and enrollment of the great majority of teacher-training institutions in which most of the teachers of the American schools are trained.

2. The present status of student health service in teacher-training institutions.

3. The needs and demands of the service as viewed from modern scientific thought and educational tendencies.

With these factors in mind, the following standards are recommended. They are not ideal, but they are simple and practical.

1. That student health service be administered by a director, responsible to the president and having the same standing as the heads of other departments; that this service include health instruction, personal service including medical and physical examination, care of the sick and medical and health consultation, and the direction of health-protecting and health-giving conditions in the school society including sanitation, recreational and corrective physical activities and community hygiene.

2. That the faculty list include at least one full-time physician, specially trained for his work and paid from the same budget in the same manner as other members of the staff are paid.

3. That along with the subject matter and general ability entrance tests, a complete medical and health examination, administered or supervised by some qualified member of the institution, be required. The detailed findings of this examination should become a part of the student's entrance record.

4. That those students whose physical condition, as judged by this examination, will prevent them from attaining vigorous health be excluded from teacher-training courses.

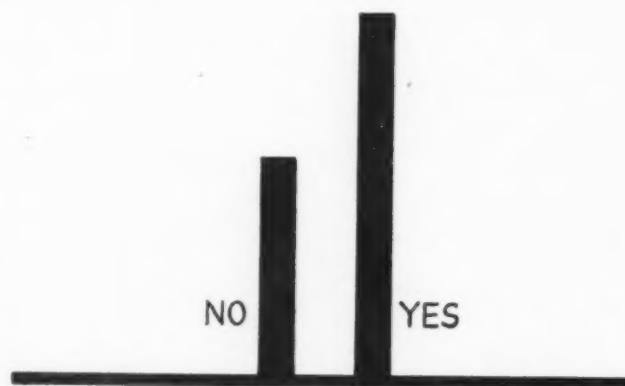
5. That students with corrective or remediable defects either be excluded from entrance to the school or else denied full acceptance as candidates for teachers' diplomas or certificates until such corrections are made as directed, this to be determined by subsequent medical examinations.

6. That regular clinic hours be provided by the health department for health advice, dispensary treatment and consultation with the student.

7. That, since the teacher is to be the guardian and directing force in the care, preservation and development of the health of her pupils, the attitude and conduct of the teacher-training student toward scientific health factors be considered in recommending graduates for professional positions and that the student's health condition be made a detailed factor in her final grades.

8. That, since a scientific attitude toward life in general and health in particular cannot be developed without some scientific background, the basic sciences be included in the general subject matter required in teacher-training institutions.

9. That training in health education proper



Graph 10.

include a subject matter course in personal and community health of at least three semester hours, a method and subject matter course in health education of at least three semester hours, and practice teaching and observation in a training school or in a public-school system which will give the teacher an opportunity to participate in a progressive classroom education program.

# Schools Designed to Meet Needs of Intermediate Elective Classes

*Evanston buildings, containing many new features in construction, are planned especially to provide the best facilities for informal classes and studies appealing particularly to individual pupils*

BY FRANK A. CHILDS, CHILDS & SMITH, ARCHITECTS, CHICAGO

**A**N intermediate school, as interpreted in Evanston, Ill., is one in which seventh and eighth grade pupils are brought together and given unusual opportunities for elective subjects. Each "home room" is arranged to accommodate thirty pupils who devote half their school hours to required subjects and the other half to elective studies that have special appeal for them.

From a small beginning this idea has developed into a definite type of building with two fine structures, the Nichols and the Haven Intermediate Schools, now housing all seventh and eighth grade pupils of the city, about 1,500 children.

These two buildings are much alike in size, cost and arrangement, so the Nichols school may be described as typical. It is three stories high, fashioned of brick, stone and tile in Venetian-Gothic architecture, and contains thirty-five classrooms and more than a dozen departments.

On the roof, which is reached by elevator, is a four-room bungalow devoted exclusively to teaching the many branches of music offered as electives. From this isolated department sounds of the musical instruments and voices do not penetrate to the rooms below.

Two stairways lead to the central portion of



*The beauty of the main entrance lobby of the Nichols Intermediate School is well illustrated in this photograph showing the wrought iron grilles opened to disclose a rich tapestry hanging.*



*Tudor Hall, shown above, is much in demand as a conference room.*

the third floor corridor which is especially arranged with skylights for use as an art gallery. The walls are so prepared that art exhibits may be tacked up for display. From this point the bleachers of the gymnasium and the gallery of the auditorium may be entered. Rooms on the north side of the third floor are reserved for instruction in art. On another side is a series of science rooms, one of which is adapted to the care of plants and animals. Half of the home rooms are equipped with standard movable desks, while the others contain four round tables each seating eight pupils for comfortable study or discussion.

On one side of the long corridor on the second floor is the entrance to the gymnasium floor. The floor measures sixty by eighty feet and is divided by a lift-up partition to separate the boys from the girls. There are suitable shower rooms and

lockers for each. Across the corridor a beautiful lobby gives entrance to an auditorium seating 600. This hall, decorated in blue, is particularly well lighted, both in the seating portion and on the stage.

One of the features of the first floor is the cafeteria, where 700 pupils may be served in one hour. Classes enter at periods of five minutes and the capacity of 200 chairs is never overtaxed. The kitchen equipment for this cafeteria is exceptionally complete and was chosen to facilitate the work in every way possible. From potato peeler to steamer, stock kettle, incinerator and the big monel metal dishwasher, the conveniences for preparation and serving of food were carefully selected.

The room is spacious and airy. In the center stands the large three-stove range, a hood and electric fan above carrying off all odors of cooking. The cook's table, with necessary implements suspended above,

is placed in front of the range and in back of it are the steamer and stock pot. All equipment is so arranged about the room that each worker has her own section, thus facilitating service. The dishwashing is done in an alcove adjoining the kitchen proper, a well planned arrangement as it keeps the lunch room equipment apart from the cooking utensils. The large electric refrigerator has doors opening into the steam table section of the cafeteria as well as into the kitchen.

The steam table section is built between the lunch room and the kitchen. Two lines of pupils enter at once from opposite ends, meeting at the center where the refrigerator cools ice cream and milk, then pass out into the lunch room where the checker sits.

The counter of the steam table is composed of black vitreous slabs with German silver, a serv-



iceable and good looking combination, easily cleaned.

An unusual and attractive feature of the equipment for the cafeteria is the gray-blue china and the blue glassware. Blue is the dominating color throughout the lunch room. Tables and chairs are painted blue with orange trimmings, blue draperies hang at the windows and placed in the wall on all sides of the room are quaint Dutch tiles in blue and white.

Instruction in manual arts is provided for in a series of rooms which, as in all other departments, may be added to as additions are made to the building. Here the first room contains a motor saw, jointer, band saw and a complex grinder. A second double room is for metal, etching and carving. The third room is for printing.

The home economics department not only provides a practical laboratory for instruction in home economics, but

through color harmonies, graceful lines and pleasing proportions instills in the minds of the pupils an appreciation of the beautiful.

The 7B and 8B classes have double periods each week in cooking, while the 7A and 8A groups are instructed in sewing. For an elective they may also choose home economics subjects. Household management and meal planning elective classes utilize the "life size" housekeeping facilities. The bedroom, charming with its apple green furniture against the ivory paneled walls, connects with a tiled bathroom. The drapes and bedspreads are of a lustrous green material with a touch of rose trimming. This room is ever in demand, as its mirrored door makes an ideal fitting room for the sewing classes. It is also used for home-nursing classes, interior decorating and as a laboratory for testing cleaning devices and methods.



*School guests are entertained frequently in this practice dining room.*

The gaily papered dining room, with green as its main color theme, accommodates twelve guests. The drapes are soft orange and the dining room furniture is a deep green edged with orange. Colorful glassware, china and silverware serve many groups in the various courses. This dining room facilitates training in serving teas, luncheons, formal and informal dinners.

Adjoining the bedroom is a sewing laboratory for the use of the regular sewing classes. The girls begin in the sixth grade to delve into the mysteries of operating a sewing machine. Their skill is gradually increased until, in the 8A, they may graduate in dresses designed and made in their own clothing classes. Neat rows of drawers at one end of the room hold the sewing tools of each seamstress. The laundry problem is solved by a wash tub and ironing board in



*In the wood shop, shown at the left, facilities are provided for turning out all kinds of interesting articles such as the ship models in the photograph.*

*Here is a typical classroom in the Nichols Intermediate School, light and airy and uncrowded. The photograph shows a mathematics class.*



*The library is an especially beautiful department of the school. It is paneled and beamed in rich walnut and the tables and chairs vary in size to accommodate all pupils.*

the same laboratory.

The cooking laboratory has a complete equipment of cabinet, desk and gas range and accommodates thirty-two girls at one time. A compact unit of kitchen cabinet, electric range, electric refrigerator, sink and work table occupies one end of the room and is convenient in the preparation of meals by meal planning classes.

During the week approximately 500 girls attend classes in these beautifully designed and practically furnished laboratories.

The spacious library, paneled and beamed in rich walnut, furnishes a place for ninety children to read in comfortable, leather backed chairs. The fifteen tables are of modified refectory style, varied in height as are the chairs to match so that the largest or the smallest child may find a comfortable chair.

Two sections of racks for magazines provide space for the periodicals needed for supplement-



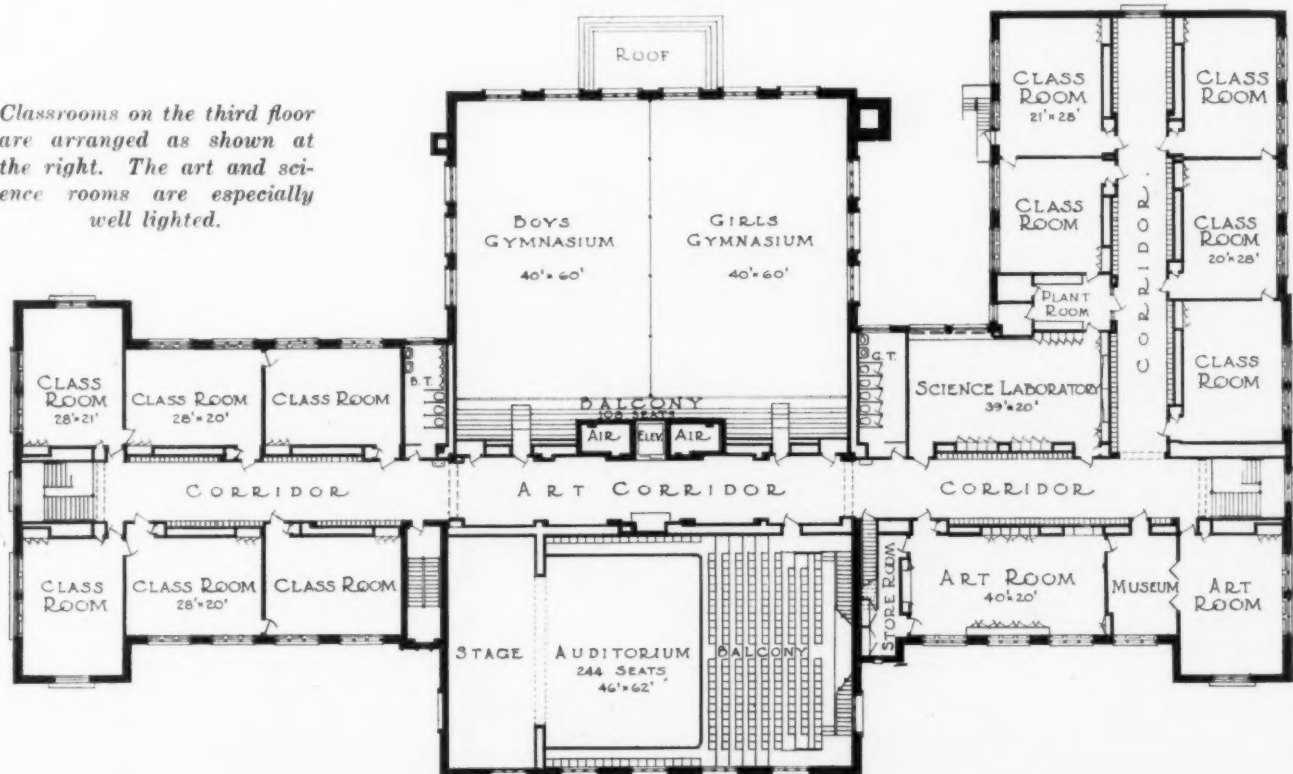
*Foods are temptingly arrayed in the cafeteria.*

ing the reference collection. The children are taught to use a reader's guide so that they may locate magazine articles quickly.

The library has three large alcoves, the center one containing a large wood burning fireplace of Italian terra cotta. The children thoroughly enjoy informal book chats while gathered around the crackling fire.

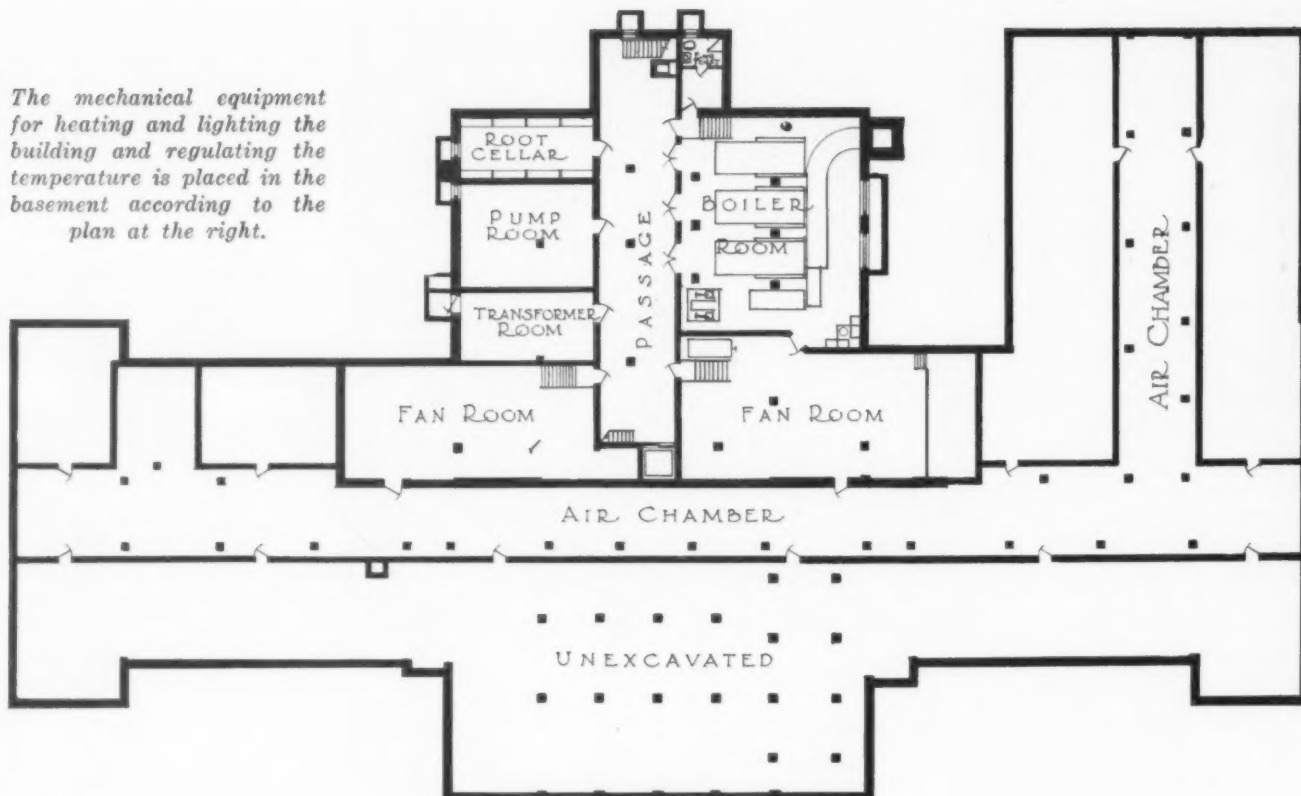
The alcove nearest the door contains the card catalogue, the picture files, bulletin boards and an open exhibit case for posters and books. The children are taught to use the card catalogue and become adept at finding their own books. They have a school newspaper on one bulletin board, with five columns of clippings from important news of weekly events. They enjoy planning and making exhibits and posters for the exhibit case and other bulletin boards. The third alcove will be glassed in later for a consultation room to be used chiefly by small groups.

*Classrooms on the third floor are arranged as shown at the right. The art and science rooms are especially well lighted.*





The mechanical equipment for heating and lighting the building and regulating the temperature is placed in the basement according to the plan at the right.



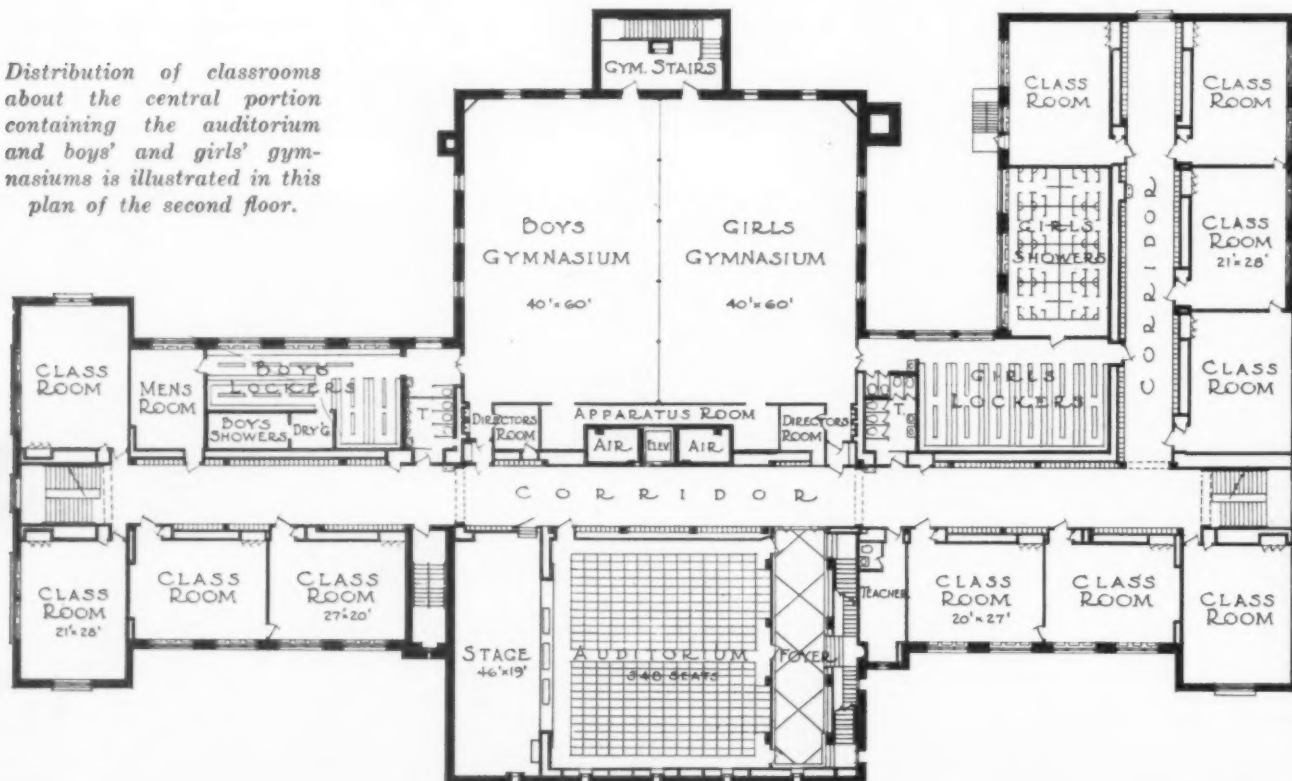
Between the alcoves are glassed cupboards for beautiful editions of books. These may be locked but the key is in constant demand by the children with "clean hands,"—the requirements for use of these handsome classics.

Above the alcoves is a balcony with quaint

wrought iron grilles in the four archways separating it from the room. This mezzanine floor is for storage space and added shelving room when this library is opened as a community branch—a plan for the future.

The room is fitted with shelving to accommo-

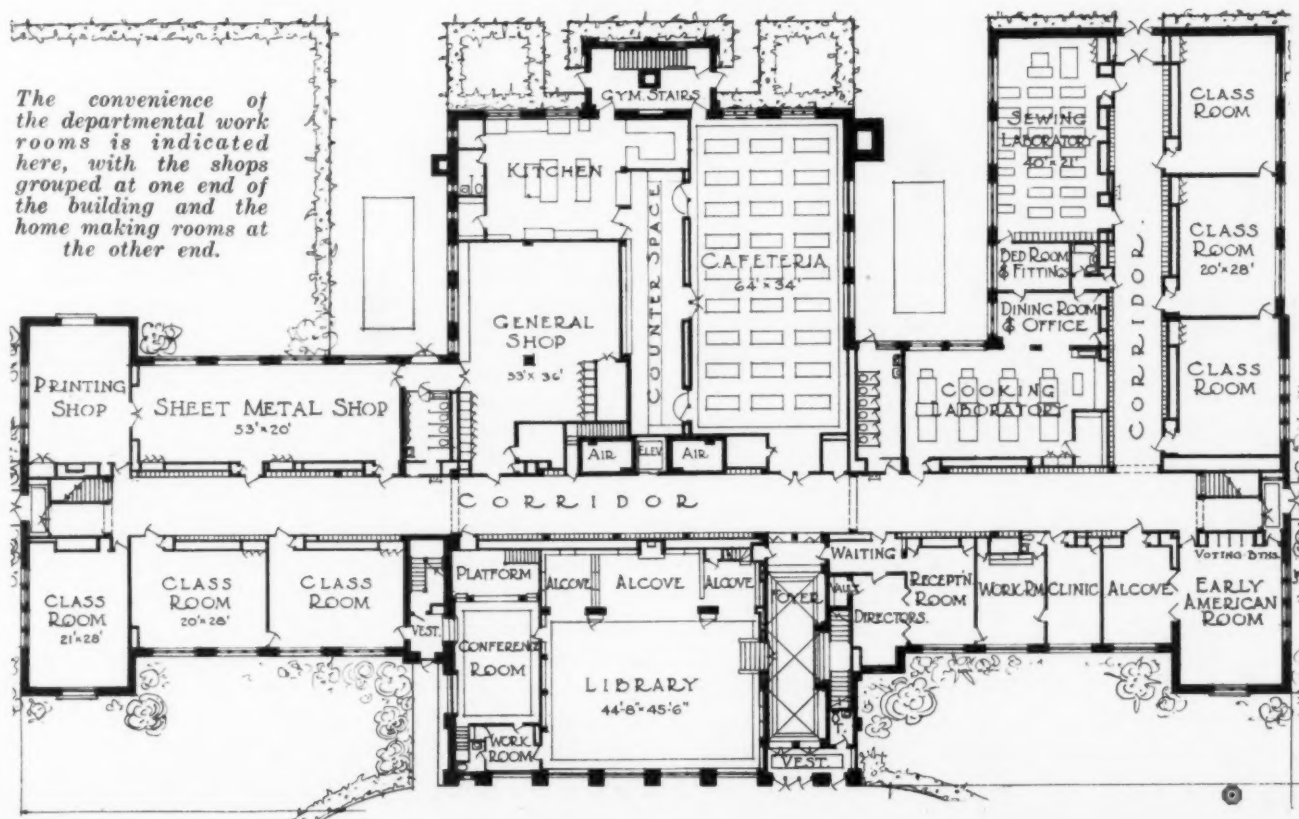
Distribution of classrooms about the central portion containing the auditorium and boys' and girls' gymnasiums is illustrated in this plan of the second floor.





*The Early American room, one of the most interesting features of the school, is shown above. Below is the plot-plan of the Nichols School, showing all but the playfield at the rear of the building and some of the landscaped grounds on all sides.*

*The convenience of the departmental work rooms is indicated here, with the shops grouped at one end of the building and the home making rooms at the other end.*



date about 10,000 volumes. It opened the first year with almost 2,000 books, all of which have been used frequently. The reference collection is kept behind the librarian's desk where it may be reached quickly. The children are taught to use all kinds of reference books including encyclopedias, atlases and year books.

The librarian's work is facilitated by a commodious desk containing trays for book cards and borrowers' files, drawers for papers and cupboard and shelves for books. A high revolving chair and a stool are necessary for comfort. A truck aids in quick disposal of books on shelves. A work room adjoining the library and under the gallery of the conference room supplies a place for cataloguing and typing as well as a storeroom for supplies. A small bathroom adjoins this work room.

Between the literature rooms and the library is Tudor Hall, a conference room furnished like an Elizabethan theater with gallery and small stage. It is used by dramatic classes, debate groups and classes reading Shakespeare. It is paneled in dark walnut with bright pennants, a handsome tapestry and the House of Lords' Tudor panels to relieve and add cheerfulness to its subdued tones.

The artistic features of the library are a constant delight to the pupils. The Italian Renaissance style is heightened by the marble mosaic panels from Venice set in the walls and wood panels at either side of the fireplace. Donatello's St. Cecilia and head of Christ, a reproduction of an early Italian painting, statuettes of the Spinario and Dante, as well as Majolica vases, carry out the effect. A double recessed archway at the far end of the room and reaching to the ceiling simulates a Venetian loggia overlooking the Grand Canal. A large mural of Santa Maria del Salute with an approaching gondola in the foreground is to fill the wall behind this archway.

#### *Voting Booths in Science Room*

Opening onto one of the most used street corners one of the social science rooms is a unique feature of this school. It is a double room with glass doors and designed as the Early American room. Here pupils study American history and government in practical surroundings—rooms of colonial design and furniture, pictures of pre-revolutionary subjects, voting booths and special entrance. Pupils hold mock elections and on days when the precinct actually is voting the pupils open the French doors and watch the real election at the booths.

Few other school districts have so far devel-

oped the community use of the buildings as has Evanston. Every department of this school has its individual entrance and may be closed from the rest of the building for evening or after school programs. The gymnasium and shops are used by the Bureau of Recreation, the auditorium by clubs and churches, the cafeteria by different organizations for banquets, Tudor Hall for small societies and the library as a branch of the Evanston Public Library.

### Advantages and Disadvantages of the All-Day Trade School

All-day trade schools are the most expensive and least efficient type of organization in the field of industrial education of the vocational type, according to Frank Cushman, chief, division of trade and industrial education, Federal Board for Vocation Education.

Such schools, Mr. Cushman says, utilize about 11 per cent of the appropriations of the federal government for vocational education and cause about 90 per cent of the trouble in this particular field.

Mr. Cushman outlines the advantages and disadvantages of the all-day trade school in relation to the unit school type. This type offers the advantages of an administrative center for both day and evening schools and for the general program of vocational education, he says. It acts as a shock absorber for the trades, absorbing some of the excess of younger men who might, if there were no school, apply to become apprentices. At the same time the unit school, all-day type is always a reservoir of workmen for emergencies, he said.

Notwithstanding their difficulties, these schools actually do prepare young people for gainful employment, he says. But along with their advantages there are several dangerous tendencies and disadvantages, he believes.

The tendencies which are dangerous are those to subordinate trade training to the high school and generally to emulate the high school, to use false standards for the selection of students, such as to pay too much attention to the intelligence quotient as determined by mental tests, to fail to recognize the market demands for trained workmen, to use the trade school as a vocational guidance center, to apply general standards as to the size of classes, to impose academic standards and to develop into a high school.

Furthermore, Mr. Cushman believes that these schools often train boys and girls for jobs that do not exist.



# Applying to Mathematics the Modern Ideas of Educational Science\*

*In formulating a utilitarian course in mathematics the basic objectives must be determined in terms of pupil development and a practical method evolved for composing these objectives into teaching units*

By GEORGE A. BOYCE, INSTRUCTOR IN ELEMENTARY MATHEMATICS, WESTERN RESERVE ACADEMY, HUDSON, OHIO

**A**FTER having laid down in the two preceding articles the philosophical and psychological principles that govern the teaching of mathematics, the question immediately confronts the practically minded person as to how these modern principles can be translated into actual teaching practice.

The first step is to define the mathematical field to be covered. The new course of study should embody those elements not only of plane geometry but also of solid geometry that may be defended according to the principles we have laid down. In many instances it will be necessary to incorporate wherever they may be needed certain elements of algebra, arithmetic and trigonometry.

The objectives in terms of pupil development are next to be determined. To do so ideally, we should carry on a direct analysis of activities and interests in actual life situations. Carrying out such a plan to perfection is seen to be impossible and impractical, however, when one reflects upon the difficulties involved, the large corps of workers needed and the tremendous amount of time and money required. In determining the objectives, then, let us first list those objectives that various researches have already established for their utilitarian value.

Raleigh Schorling has analyzed most of the scientific studies so far conducted in mathematics.<sup>1</sup> As a result of that investigation, those items that are geometrical in nature and that may be defended by scientific researches are here listed as basic objectives:

To apply the tangent relation in solving a right triangle.

To bisect a line with compasses; to bisect an angle with compasses.

To draw a circle with compasses; to draw a right angle with a ruler; to draw a triangle to

scale when sufficient parts are known; to draw parallel lines with a protractor.

To estimate approximate results.

To find the entire surface of a cube, prism or cylinder.

To interpret news and magazine references to metric units of length, area, volume.

To know that  $\pi$  is approximately 3 1-7 or 3.14.

To know the meaning of altitude, *e.g.* triangle.

To know the meaning of: angle; acute angle, obtuse angle; approximation in a measurement; arc; area; circle; cube; cylinder; diameter.

To know the meaning of: drawing to scale; equality; error in a measurement; formula; length; measurement; parallel lines; parallelogram; perimeter; perpendicular; perpendicular lines; pi; radius; rectangle; rectangular prism; right angle; similarity; square; surface; transversal; triangle; trigonometry; volume.

To know the sources of information concerning relations between: gill, pint, quart, gallon, bushel; inch, foot, yard, mile; millimeter, centimeter, meter; ounce, pound, ton; pint, quart, peck, bushel; second, minute, degree, right angle, a complete rotation; square inch, square foot, square yard, square rod, acre, square mile; thing, dozen, score, gross; ton of coal (soft or hard) and cubic feet.

To know wherein some activities of modern life require a high degree of accuracy of measurement.

To letter an angle in a conventional way.

To measure a line with a ruler accurate to nearest tenth of an inch.

To read a table of tangents with three places.

To read an angle lettered in one of the three conventional ways.

To use a scale drawing in the plan of a building or reading of a map.

To use the following formulas:  $A = bh$  (area of rectangle);  $A = \frac{bh}{2}$  (area of triangle);

\*This is the third and last part of an article on modernizing high-school mathematics. The first two parts of the article appeared in the August and September issues of THE NATION'S SCHOOLS.

<sup>1</sup>A Tentative List of Objectives in the Teaching of Junior High-School Mathematics, Raleigh Schorling, pp. 45-78, George Wahr, Ann Arbor, Mich., 1925.

$A = \pi R^2$  (area of circle);  $A = s^2$  (area of square);  $C = \pi D$  (circumference);  $V = lwh$  (values of rectangular prism);  $V = \pi R^2 H$  (volume of cylinder);  $V = s^3$  (volume of cube).

To use the 45-45 right triangle in drawing angles.

To use the 30-60 right triangle in drawing angles.

At this point there are those who may ask, "Are there not many items included that have been learned prior to the tenth grade and that are too easy?" Experience shows that caution is needed and that no item should be excluded until experience or a diagnostic test shows that the class knows the item well from all aspects. Many teachers might think that the objective "to know the meaning of altitude of a triangle" is too easy for the tenth grade. Most pupils beginning the tenth grade have the idea that altitude of a triangle means the height of a triangle. When a scalene triangle is drawn with a horizontal base they can all recognize the vertical altitude. But they do not know that a triangle has three altitudes, they cannot distinguish the altitude when the triangle is obtuse nor can they all tell what is an altitude when the triangle is tilted so that no side or base is horizontal.

#### *Elective Objectives Listed*

Chosen for presentation here are "elective" objectives from Schorling's list. At present there is no evidence, independent of opinion, that these items may be defended for their utilitarian value to the learner. Hence, they are classified as "elective" for interested or bright pupils.

To add segments.

To apply the cosine relation in solving a right triangle; to apply the sine relation in solving a right triangle.

To appreciate the beautiful geometric forms in nature, or to become familiar with geometrical forms in nature; to appreciate the use of geometry in art and architecture, or to become familiar with certain uses of geometry in art and architecture.

To approximate a distance by use of a pace scale.

To carry computations, involving measurements, to the proper degree of accuracy.

To compute the third angle of a triangle when two angles are known.

To construct: a hexagon by means of a circle; a line perpendicular to another line with compasses; a square; an octagon by means of a circle.

To demonstrate the theorem of Pythagoras.

To draw: a right angle with compasses; an angle of required size with a protractor; an isos-

celes or equilateral triangle; parallel lines with compasses.

To estimate the area of a figure drawn on cross-section paper.

To find a side of a triangle by the tangent relation.

To find the third side of a right triangle when two sides are known (using formula  $a^2 + b^2 = c^2$ ).

To know that if two triangles are similar, then the ratio of any two corresponding sides is equal to the ratio of any other pair of corresponding sides; that man has invented fine instruments for measuring angles (transit and compass); that the sum of the angles of a triangle is  $180^\circ$ ; that to locate a place, its distance and direction from some reference point may be used; that two triangles are similar if the ratio of one pair of corresponding sides equals the ratio of another pair of corresponding sides and if the included angles are equal.

#### *Knowledge of Triangles*

To know that two triangles are similar if two angles of one are equal respectively to two angles of the other; that two triangles have the same size and shape if two angles and the included side of one are equal respectively to two angles and the included side of the other; that two triangles have the same size and shape if two sides and the included angle of one are respectively equal to two sides and the included angle of the other.

To know the important parts of a compass; to know the important parts of a transit.

To know the meaning of: angle of elevation and angle of depression; central angle; cone; congruence; corresponding angles; corresponding sides; cosine of an angle; directed number; face (of solid); identity; indirect measurement; isosceles triangle and equilateral triangle.

To know the meaning of: locus; octagon; parallelogram; polygon; pyramid; reflex angle; rhombus; section; sector; sine of an angle; sphere; straight angle; subscript; symmetry; tangent of an angle; trapezoid; vertex; vertical angles; zero of a scale.

To know the theorem of Pythagoras.

To measure: a line with compasses accurate to the nearest tenth of an inch; an angle with a protractor; an inaccessible distance by a scale drawing when necessary data are given; the height of an object by shadow reckoning.

To perform simple uses of a plumb line; to perform simple uses of a T-square.

To solve the formula  $a^2 + b^2 = c^2$  (for  $a$  or  $b$ ).

To test a triangle to see if it is a right triangle having given the length of the three sides.

To use proportion in similar triangles so as to

compute a side when necessary data are given.

To use the following formulas:  $A = \frac{bh}{2}$  (area of parallelogram);  $A = \frac{H(B+b)}{2}$  (area of trapezoid);  $S = \pi R^2 + 2\pi RH$  (surface of cylinder);  $S = 4\pi R^2$  (surface of a sphere);  $V = \frac{BH}{3}$  (volume of pyramid);  $V = \frac{\pi R^2 H}{3}$  (volume of cone);  $V = \frac{4}{3} \pi R^3$  (volume of sphere).

After determining the list of objectives, we are ready to organize them into main headings and teaching units. For this task no categorical technique may be given.<sup>1</sup> It involves the imagination and art of the teacher to a great extent. The main headings should be determined on a functional or natural, life activity grouping. Functional headings such as "Geometry in Business and Industry," "Geometry in Hobbies," "Geometry in the Home" and natural, life-activity headings such as "Laying Out a Baseball Diamond," "Building a Silo," "Computing the Capacity of a Coal Bin," are suggested rather than "Rectilinear Figures," "Similar Polygons" and the like. The objectives are then allocated under the various main headings and the teaching units completed in detail. Naturally the material will go through many refinements and revisions according to actual classroom experience.

By way of illustration, a sample unit is given. It is not intended in any way to be a model which all teachers should or must follow; it is intended solely as a concrete illustration embodying the principles we have been discussing.

#### *Laying Out Better Baseball Fields:*

Unit I. The size and shape of a baseball diamond. Time—two or three days.

Objectives: (1) to know the meaning of square; (2) to know the meaning of right angle; (3) to know the meaning of perpendicular; (4) to know the meaning of perpendicular lines; (5) to know the meaning of perimeter.

Elective Objectives: to know the meaning of rhombus.

Procedure: Why laying out a baseball field is introduced as a classroom problem. The teacher should explain that all boys at some time lay out a baseball diamond for "back lot" games. Even after they grow up, they often find themselves on a summer's day thrown together with friends or

business associates who want to organize a game of ball for fun and exercise. Generally somebody puts down a stick or stone for each base at any point that "looks about right." The result is a field nowhere near the size, shape or proportion of a real ball diamond. Here, therefore, is a good starting point for learning to do the work better and incidentally learning practical mathematics at the same time.

#### *A Baseball Diamond Problem*

What is the shape of a baseball diamond? The discussion should develop the fact that most of the pupils need to extend and improve their knowledge of a baseball field. Such questions as the following may be raised: What is the shape of a baseball field? Is it a square or a rhombus? What is a rhombus? Are the angles in a ball field all equal? Is the angle at first base the same as at second? Is the distance from home to second the same as the distance from first to third? Are the foul lines perpendicular to each other?

What is the size of a baseball diamond? Raising the following questions will suggest the assignment and the seeking of answers from reliable sources: What is the proper distance from home to first? From first to second? From home to the pitcher's box? From home to second? What is the size of a junior baseball field? Is there any official junior field?

Practice exercises. After the pupils have made oral reports on the assignment, distribute mimeographed copies of the practice test. When most of the pupils are finished, have them score the papers and discuss their errors.

Materials: Ruler. Mimeographed copies of the practice exercises.

Assignment: Hand in a neatly ruled diagram of a baseball field and show all dimensions that you can find. By consulting a dictionary and the index of any textbook on geometry find out all you can as to the complete meaning of square, right angle, perpendicular and perimeter.

Additional assignment for extra credit: Find out from a dictionary or geometry book the meaning of rhombus. Prepare a brief oral report on the history of baseball.

#### *Books for the Reference Shelf:*

"Baseball" in the New International Encyclopedia or in the Encyclopedia Britannica, both of which give historical data on baseball and dimensions of the field.

Leighton, K. W., "Gilbert Civil Engineering for Boys," p. 90, A. C. Gilbert Company, New Haven, Conn., 1920. 93 pp. Gives dimensions of various athletic fields, the size of the official junior base-

<sup>1</sup> The Technique of Curriculum Making, Henry Harap, Part VII, The Macmillan Co., 1928.



ball field and helpful surveying hints of interest.

Sheridan, J. B., "Baseball for Beginners," Spalding's Athletic Library, No. 365, American Sports Publishing Co., New York, 1921, 10 cents. A good booklet to include on the reference shelf for creating zest. Page 56 shows the dimensions of the junior field for boys under sixteen years of age.

Spalding, Albert G., "America's National Game," American Sports Publishing Co., New York, 1911. Gives complete historical data, although the book in general is a bit dry for a youngster. Pages 17-21 and 41-42 give an excellent description of the game as it was played before the diamond was created.

Spalding's Official Baseball Guide, American Sports Publishing Co., New York. Gives detailed and complete measurements of the field, rules and miscellaneous data.

Wray, J. E., "How to Organize a League, How to Manage a Team, How to Lay Out a League Diamond," pp. 95-101, Spalding Red Cover Series of Athletic Handbooks, No. 83R, American Sports Publishing Co., New York, 1921, 25 cents. Gives an excellent method for quick laying out of a diamond accurately.

Wright, George, "Sketch of National Game of Baseball," in records of the Columbia Historical Society, vol. 23, pp. 80-85, published by the Columbia Historical Society, Washington, D. C., 1920. Gives a clear and concise exposition of the high spots in the history of baseball.

#### *Additional Reference Books*

Barbour, Ralph Henry, "Double Play," a story of school and baseball, D. Appleton & Co., 1909. Fiction.

Charnley, Mitchell V., "Secrets of Baseball Told by Big League Players," D. Appleton & Co., 1927.

Evans, Billy, "How to Umpire," Spalding Red Cover Series of Athletic Handbooks, No. 81R, American Sports Publishing Co., New York, 1920.

Foster, John B., "How to Play Baseball," Spalding's Athletic Library, Group 1, No. 202, American Sports Publishing Co., New York, 1921.

Grey, Zane, "The Short Stop." Fiction.

Grey, Zane, "The Young Pitcher." Fiction.

Mathewson, Christopher, "Second Base Sloan," 1917. Fiction.

The last seven books listed are additional books that may be included on the reference shelf for the purpose of creating zest.

Essential Facts: A baseball field is a square. It is ninety feet from each base to the next; the pitcher's box is a few inches over sixty feet from home plate; each base line is perpendicular to or

at right angles to the adjacent base line; the perimeter of a field or figure is the distance around it and is equal to the sum of all the sides.

Elective Facts: A rhombus has four sides. The opposite sides are parallel. All the sides are equal but the adjacent angles are not necessarily equal.

#### *Practice Test for Unit No. 1*

.....  
Name                      Class                      Date

Fill in the blank spaces in the following statements:

1. A baseball field is commonly called a.....  
..... Its geometrical shape is a.....
2. The distance from home to first base is.... feet.
3. From first to second the distance is.... feet.
4. A square has four.....sides.
5. The opposite sides of a square are..... and.....
6. A square has four.....angles.
7. Each angle of a square contains..... degrees.
8. The sum of all the angles of a square equals .....degrees.
9. The diagonals of a square are.....
10. The diagonals.....each other, that is they cut each other into two equal parts.
11. The angle at first base is.....degrees.
12. The angles at second and third bases are each.....degrees.
13. The distance from home to second is (greater than, less than, equal to) the distance from first to third. (Underline the correct one).
14. The sum of the four sides of a square is called the..... of the square.
15. The foul lines are at right angles to or are.....to each other.
16. The base lines from first to second and from third to home are both.....to the line from home to first.
17. A right angle contains.....degrees.
18. The.....of a square equals four times a side.
19. The base lines of the official junior field are.....feet.
20. The pitcher's box is.....feet from home plate in a major diamond and....feet from home plate in the official junior diamond.
21. Vertical lines are always.....to the horizontal.

Attention is called to the fact that the material presented does not represent a complete course of study for the tenth grade. There are certainly additional utilitarian values in geometry that have not been determined, although the brave

worker must not expect the new course to resemble very much the traditional, demonstrative geometry. As previously indicated, pure mathematics or book mathematics as such should be reserved for the brighter pupils who in later years elect to go into mathematics for mathematics' sake or for college preparation.

In order to build a complete course of study that will embody the guiding principles as laid down in this discussion, additional studies of a research nature need to be conducted for determining further objectives. To conduct such studies should not be beyond the realm of possibility for many experienced teachers. A definite procedure that could be carried out in any school might be something like the following:

State, in terms of pupil development, the objectives of geometry that can be found in selected courses of study in mathematics, such as those of the St. Louis public schools; in textbooks in mathematics; in curriculum investigations such as those by Bobbitt and Charters; in general books by frontier thinkers such as Bertrand Russell and John Dewey; in vocational texts involving mathematics and in reports of various committees such as the college entrance examination board and the National Committee on Reorganization of Mathematics.

Such a list would then include the objectives found in present practice and also many objectives that are being urged by educational thinkers for inclusion in improved practice.

Present the foregoing objectives in suitable form to successful laymen and professional men for checking what they remember having actually used or what they felt they needed and to high-school seniors and juniors who have had geometry, for checking what they felt was "very interesting," "interesting," "no decided feeling" or "disagreeable."

#### *Analyzation of Facts*

Analyze the geometrical constructions, facts and terms used in physics, chemistry, shop work and other subjects that the majority of high-school pupils study.

Examine and tabulate the mathematical items involved in social statistics and books on the most important civic problems; in feature articles in newspapers and magazines; in widely circulated public documents such as the President's messages to Congress, reports of community funds, farmers' bulletins; in numerous studies and articles on education by professional writers; in books of hobbies and hobby columns in boys' magazines and in reports by pupils of their individual hobbies and the mathematics involved in them.

A plan of research like this would unearth many more very desirable items of utilitarian and pragmatic value.

In summarizing this study, it may be emphasized that an attempt has been made to work out the most important steps in building a modernized course of study in high-school mathematics. These steps are:

1. A practical definition of education.
2. A modern concept of the curriculum.
3. A list of the guiding principles of psychology and philosophy.
4. Selection of a field for study. In this case it was geometry.
5. A preliminary list of defensible objectives.
6. A method for composing the objectives into teaching units.
7. An outline of a practical plan for further studies that experienced teachers might conduct to determine additional objectives.

### The Status of Deans of Girls in High Schools

To determine the status of deans of girls in high schools, a survey was made recently of 146 schools of North Carolina having an enrollment of 150 or more pupils. The survey was sponsored by the North Carolina Association of Deans and Advisers of Women and the report appears in the September *North Carolina Teacher*. A questionnaire was sent to the 146 schools surveyed, and 137 replies were received.

Of the 137 high schools responding, 35 per cent claimed to have on their faculty women "officially appointed to supervise the various phases of school life among the girls." They are known by the title, "dean of girls," "adviser of girls," "lady principal," "student adviser" or "vice-principal." The answers received to the questionnaire show that the larger schools are much more progressive in this field than the smaller ones.

The majority of the deans or advisers, according to the survey, had had several years of teaching experience before they were chosen for the advisory position. Their salaries range from the regular state salary schedule to almost \$3,000 in a few of the larger schools. Almost without exception the deans have the bachelor's degree and a great many are working toward higher degrees. In most instances the deans serve in forming a closer contact with parents, through parent-teacher association work, personal conferences, telephone calls and the like. Usually the deans serve to link the schools with outside agencies and individuals doing similar work.

## The NATION'S SCHOOLS

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## Editorials

### When Is Education Too Costly?

ONE trend in school planning that is noticeable and that has attracted more than passing comment is the care that is being given to creating for the various classrooms the proper environment.

It is customary now to have an English room with a setting reminiscent of Shakespeare, a classical room fashioned after the amphitheaters of ancient Rome and Greece and all other rooms and corridors equally appropriately planned. The homely details of caring for the household, washing the dishes and keeping the home clean are now taught with the aid of a model three or four-room apartment in which the girl pupils properly learn the technique of home making. Suggestion and realism are rapidly being introduced with telling effect.

The time is not far distant when all departments of the school will be modeled in keeping with the subjects that are taught. Color, draperies, pictures and works of art have rapidly replaced the dull, drab walls of the old school-house. Schools that are built to-day take into consideration the esthetic emotions of the pupils. What our grandfathers considered inconsequential we have learned to value; what our fathers thought unnecessary we know to be part of the pupils' education.

Every high school in the country has its pupils that drive their automobiles to school. Inside the building they have instruction by motion picture and radio. Their health is so vital that systems of mechanical ventilation are installed in good schools. Plenty of time is allowed for body building exercises in the gymnasium, cleanliness is greatly encouraged and pupils are not allowed either to overwork or to underwork.

The expenditure for all of these things has been wise and the proof lies in the enormous increase in high-school attendance, in a happier and more intelligent community, in a greater self-respect instilled in the minds of the pupils and their parents and in a greater earning capacity for those who have attended the high school.

Often schools are criticized for their expenditures, and it is comforting to know that this criticism will be entirely forgotten when the pupils of to-day become the dominant voice in civic affairs of to-morrow. The only ones who now claim that



the cost of education is too high are the politicians, most of whom are without the benefit of present day education and all of whom hope to divert the school funds to showier and better vote getting purposes.

Before the cost of education is criticized it might be well first to determine what education is worth. It is an economic problem similar in every detail to the purchase of new machinery for a factory. If it is needed, if it can be properly used, if it will last a reasonable length of time, if it will pay a good return to the purchaser, the price proves to be of little consequence. The same is true of education. Education should pay a good return to the community but, instead of paying in terms of manufactured products, it should pay in better citizenship, better homes, a greater appreciation of culture and greater self-respect. Any educational system that fails to educate is costly and, conversely, any system that does a thorough and complete job is cheap, no matter the price.

### The Intelligent School Board

**N**O ONE wishes to minimize the duties of the school board, and there is no one who does not appreciate fully its usefulness in the community. It is an integral part of the school system of the country and when functioning properly it takes its place in the front rank of education.

As has been pointed out several times in this magazine by such men as William McAndrew, formerly superintendent of schools, Chicago, M. R. Keyworth, superintendent of schools, Hamtramck, Michigan, and John Guy Fowlkes, University of Wisconsin, the school board is a policy making organization that delegates all administrative duties to the full-time paid executive, the superintendent. Everywhere this is recognized as the ideal and with few exceptions this is the rule that is successfully followed.

The importance of the superintendent is emphasized now more than ever and he is facing many responsibilities that were unknown to him thirty-five years ago. It is he who directs all activities and who reports these activities to his board. It has been a gradual evolution that has brought about this condition but to-day the superintendent is chosen by the intelligent school board for his business ability as well as for his knowledge of educational procedures. After he is chosen he is given a free rein to conduct the business of the school system and in this way a better organization is established and greater

benefits result to the community and to the pupils.

Wrangling between the school board and the superintendent is a relic of the past solely because the board passes on to the superintendent those responsibilities that are his. When discord does occur it is invariably traced to the interference of the board or to one of its members in the performance of the superintendent's duties.

### Is There Educational Value in Learning Hard Words?

**P**ROF. C. G. SHAMBAUGH, Stanford University, has been going through textbooks in ancient history used in secondary schools and he has listed hard words that are difficult to pronounce and that a pupil rarely if ever encounters outside of his textbooks.

Professor Shambaugh has been asking teachers whether they think there is value in requiring pupils to memorize such hard words as Aegina, Aegospotami, Aemilianus, Aeneid, Aetius, Agamemnon, agglutinating, Agora, agrarian, Agri-gentum, Agrippina, Aghiman, Ahura, Ahuramazda, Akamantis, Akhenaten, Akkad, Aliari, alluvial, Alma-Tadema.

Some teachers have replied that it is beneficial for a pupil to enrich his vocabulary by learning words that he does not see or use every day. But suppose he will never see or use certain words after he completes his course in ancient history? In such a case would he be benefited by struggling with these strange words—strange in appearance, in pronunciation and in meaning? What is the use of adding to one's vocabulary words that will not enter into one's thinking or speaking or writing, or that will not occur in one's reading?

There is a psychological principle at issue that is of much consequence in all teaching. If a pupil must hurdle strange, unrecognizable and unpronounceable words in order to go forward in the mastery of new material, he will be impeded in his progress and he may be defeated in attaining his objectives. Investigations have shown that difficult words may constitute a barrier to intellectual advance and especially to the conquest of new intellectual fields. Some pupils will go dead intellectually when they come up against remote and strange terms. Others seem to have agility in sidestepping them and pushing on. But take a hundred pupils chosen at random, and the chances are that sixty or more of them will be hindered rather than helped in their intellectual progress by having to deal with words that are entirely out of the range of their interests, their needs, or their intellectual experiences.

If new words relate to concrete realities with which a pupil is dealing at the time he encounters the words, he will be incited to master them, but they must be directly connected with objectives or phenomena that lie within his range of experience or observation in order that he may be able to grapple successfully with them. They are then learned as symbols of real things that can be grasped in a concrete way. In ancient history, however, these concrete realities are lacking for the most part and so the hard words must be conquered as entities in themselves. For high schools there are no realities to which such words as are given above can be attached or which they describe.

A pupil in the high school simply finds such words verbal and psychological barriers to intellectual advance. They do not enrich his vocabulary because they are remote from his thinking, speaking, writing and reading. Professor Shambaugh has shown that they do not occur often enough even in ancient history textbooks for pupils to acquire any degree of familiarity with them. But even if they should be introduced so frequently in these textbooks that pupils would have to become accustomed to the look and the sound of them, they would still never function outside of the textbooks and so it could not be said that a pupil would enrich his vocabulary by trying to get acquainted with them in their visual, auditory and content aspects. The conclusion to be drawn is that most of them ought to be eliminated from a high-school pupil's study of history.

### Real Research Versus Pseudo Research

THE one thing that sets education apart from other professions, that makes it outstanding as a force in this country, is the thoroughness with which problems have been attacked and solutions found. Research in the school systems of America has done more for the advancement of civilization than any other one factor except, of course, the important research of the medical profession.

There is, however, something to be said on the subject of the difference between researching for facts and researching simply for love of the work. There is much lost motion in some of the research that is being done to-day. Many professors of education and public-school research men take upon themselves enormous tasks, the results of which are never put to practical use. Because of the trivial and unimportant subjects that are often studied there is always a danger that re-

search of this sort will bring the entire profession to ridicule. We should remember that research is of value only when the end results can be used in the solution of some problem. To devise a questionnaire, mail it to all parts of the country, require the recipient to fill it in and return it, to tabulate and analyze the answers to the question and then to present the results only to find that the subject was not worth the effort, is one way of rapidly killing important research. We cannot expect the cooperation of other educators when we waste their time upon inconsequential matters that will not get us anywhere.

A definite goal, a subject well evaluated and work well done beget worth while research which is of the greatest benefit to the educational profession. We should encourage it, but to do this we must discourage that type of research the results of which cannot be applied.

### Protecting School Teachers' Investments

OFTEN we hear of a questionable bond house that has gone bankrupt or has come to the attention of the civil authority for irregularity in its transaction. Invariably we find that among the customers who suffer losses are many teachers and others connected with education. A Chicago bond broker recently disappeared and with him the savings of many school teachers.

School teachers can ill afford to lose money through poor investments. Yet, how are they to know which are good investments and which are poor? The glib salesman tells them about 7, 8, 9 and 10 per cent return on the money and the teacher, unused to ordinary business, to say nothing of the intricate bond business, becomes enthusiastic and invests without investigation.

Is it asking too much to urge the school superintendents to guide the personnel of the school system in their investments? Cannot the thoughtful superintendent devise some means whereby the teachers may be safeguarded against foolish commitments to unscrupulous bond salesmen? It would be a simple matter for the superintendent once a month to distribute a mimeographed bulletin reporting legitimate and sound investments for teachers, in varying sums, and detailing the methods of purchase. There are thousands of responsible bond houses of long standing and with spotless reputations that would welcome the chance to cooperate with the superintendent in helping teachers select worth while securities.



# Problems of Childhood Provide Material for New Books

*Recent literature emphasizes the necessity for a greater knowledge of the child and of childhood and discusses the subject from biological, psychological and sociological angles*

BY ARTHUR B. MOEHLMAN, PROFESSOR OF ADMINISTRATION AND SUPERVISION, UNIVERSITY OF MICHIGAN

PHILOSOPHERS and experimentalists in education have been insisting for at least a decade that the educational process is a very complex one. The relative inefficiency of average present day methods has been disclosed not only by members of the profession but by many intelligent laymen as well. Increasing emphasis has been placed upon the necessity for a greater knowledge of the child and of childhood. The necessity for approach from the biological, psychological and sociological angles has been reiterated time and again until the serious student of education may have the impression that the new leaven has permeated rather completely field thinking and practice. Not so, however.

## *Theory and Practice Widely Separated*

Even casual survey of field practice leads inevitably to the conclusion that the findings of the experimentalists, save in isolated instances, have had little effect upon practice. For this wide gulf between advanced thought and field practice there are many reasons. Part of the blame must rest with the teacher-training institutions that have been slow to incorporate in teacher-training courses adequate scientific preparation in the basic biological, sociological and even, in many instances, the psychological fields.

Part of the blame lies with the field leaders who have neglected seriously to keep abreast of current discovery. Further blame lies in our current conception of educational organization, developed in patchwork fashion and providing inadequately for growth and change within the organization. Whatever the reasons, this situation should be changed as rapidly as possible in the interests of the children as well as of the social group.

This may be accomplished in several ways. More careful examination and objective appraisal of teacher-training work should result in discarding many traditional concepts and should

point the way to the reorganization of such curricula upon a more scientific basis. Translators are needed who can take the discoveries of the experimentalist and present them in a simple, straightforward manner so that the implications of the various problems may be easily understood by those who have little background for the more technical aspects of laboratory procedure. Careful selection of literature in these fields should be made by superintendents and such pertinent material placed in the various school libraries as will give teachers and parents an opportunity to read extensively and to familiarize themselves with the problems of childhood and with suggested solutions.

The work of translation, of simplification and of interesting development is a difficult task. Not many are capable of it. It requires a specialized ability and a sympathetic journalistic technique. The work of Angelo Patri is unique in this field. His little discussions of childhood and child problems are doing much to direct the attention of parents to existing problems. Such magazines as *Parents* are likewise performing yeoman service in bringing parents face to face with their ascertained but generally little understood difficulties. The great need is for more popular interpreters both for parents and for teachers.

Current literature in the biological, psychological and sociological fields and in the administrative aspects of these problems presents interesting examples and wholesome tendencies. Some of these books are well suited for parents as well as for professional educators.

## *Child Hygiene:*

Almost sixteen years ago Lewis M. Terman, Stanford University, published "Hygiene of the School Child." At that time Dr. E. P. Cubberley, dean, school of education, Stanford University, pointed out that the time was passing when teacher training could be based solely upon psychology and methods. The subject of child



hygiene was slowly introduced into the more progressive training centers. Even to-day, however, there are few institutions in which it is a basic requirement. Concerning the original publication, for a long time the only one in the field, little need be said. The reviews were generally eulogistic and deservedly so. Now Doctor Terman, assisted by Dr. John C. Almack, has published a comprehensive revision and enlargement of the original text and it is a book that merits serious consideration both as a text in teacher training and as a part of every public-school teacher's professional library.

The revision is offered in five parts. The first two chapters seek to integrate the problem of hygiene and the general educational problem. The next three chapters are devoted to facts and principles related to child growth. Growth disorders, defects and disease are accorded nine chapters and include discussion of posture, growth, malnutrition, mortality, morbidity, tuberculosis, teeth, nose, throat, hearing, vision and the problem of headaches. Each subject is carefully treated and many valuable suggestions are offered. The fourth part is devoted to preventive mental hygiene and considers the nervous child, the more common neuroses of development, the education of nervous children, speech defects and sleep. The last section discusses special aspects of educational hygiene. Two chapters are devoted to the physiology of ventilation and the hygiene of the classroom. The health of the teacher and the teaching of health and hygiene conclude the volume. In the final chapter valuable analyses of trends in health education are presented and interesting suggestions made for the correlation of the health program with other curricular activities.

#### *Physical Education Discussed*

Of more limited scope and value is A. F. Myers and O. C. Bird's recent effort, "Health and Physical Education." It is the purpose of the authors to present a modern program of health and physical education for elementary schools. It is intended for individuals preparing for teaching and for teachers, principals and supervisors in the field. The authors differentiate between the health and physical education program, the logic of which is debatable. In their truly functional aspects the physical education requirements might be more profitably integrated directly as a subdivision of the general health program. The attempt towards separation can have no beneficial effects. On the contrary, this alignment may tend to increase the diversion which always exists and which is notably evident in competitive athletics.

Many of the problems skillfully treated by Terman and Almack are given only the most casual consideration by Myers and Bird. Mental hygiene, teaching of health habits, communicable diseases and correction of physical defects are all too scantily covered. The chief contribution of this volume in our estimation is the treatment of the activities program developed for the different age groups. In this respect it complements the Terman-Almack publication. The first is far richer with respect to the hygiene aspects and the second presents the problem in its applied curricular form.

#### *Psychology:*

Considering the all-powerful influence of emotion in our civilization all too little attention has been given (from the educational aspect) to this field. William Moulton Marston's "Emotions of Normal People" is an important contribution. He defines the normal emotions as those "biologically efficient." After this introduction he discusses various psychological theories in this field. With the exception of one chapter devoted to abnormal emotions, the entire book considers briefly the emotions as "biologically efficient." The final chapter is devoted to a consideration of emotional reeducation.

After reading of some of the recent psychiatric productions, Doctor Marston's volume comes as a distinct relief. He meets and takes definite issue with the apparent tendency on the part of many psychiatrists to consider anything "normal" save conventional average reactions. In so doing he is performing a distinct service for the confused and discouraged layman.

Of its ultimate value, Marston's brother psychologists may speak. Immediately, there appears to be a wealth of worth while material which should be quite helpful to the teacher and administrator. The style is slightly pedantic and the entire book presupposes a fair scientific background. Its value to the layman is questionable.

"Personality Adjustments of School Children" by Dr. Caroline B. Zachry, State Teachers College, Montclair, N. J., is a popular treatment of a very important subject. An excellent introduction by Dr. William H. Kilpatrick expands the purpose and the value of the treatment as stated by the author in the preface. Doctor Zachry, a public-school psychologist, has written the book primarily for the classroom teacher. Cases that came under her observation when she was an instructor in the Lincoln School, Teachers College, Columbia University, are presented. Because of the close interrelation of home and school in the development of personality, the material

has been presented so concretely and so simply that the book may be used to advantage by both parent and teacher and the essential cooperative effort, based upon sympathy and understanding, developed.

Five authentic case studies include examples of the troublesome child, the quiet, overconscientious child, polyglandular difficulty, the overdependent child and the overanxious child. Each case is simply presented, followed by analysis and interpretation together with suggestions for treatment. The overconscientious child, who generally escapes notice because he is "good" and therefore not disturbing to the teacher, is shown in many instances to be just as needful of attention as the more boisterous and annoying individuals. A chapter is devoted to the elements of personality and their adjustment and another to the relation of the school to such adjustment.

#### *Discussion Is Helpful*

The cases presented and the remedies proposed should be extremely helpful to any teacher in the consideration of similar problems. No cure-all is advocated but a definite scientific point of view, sympathetic in character, is presented. Careful reading should give to the teacher an understanding and point of view that is all important in incipient maladjustment. It should also be helpful to the specialist to whom such cases may finally be referred.

Elizabeth Sloan Chesser, an English physician, has prepared a little book entitled "Youth" which is designed for two generations, parents and children. Although written by a physician, it is distinctly psycho-sociological in its flavor. Angelo Patri prefaces it with a charming introduction in which he calls attention to the problems and bespeaks tolerance and wisdom upon the part of the parent. The writing starts with youth in rebellion. The inevitable conflict between any two generations is skillfully shown. The problems of education are considered chiefly from the English point of view and are not generally applicable to our situation. Doctor Chesser discusses successively health in adolescence, why and when youth is unhappy, food in adolescence, self-expression, love and marriage, hygiene of marriage and young mothers of to-day. Sane and well balanced in treatment, this little book should be valuable for parents and teachers. It might well form several worth while programs for parent-teacher meetings.

The sociological contributions to this group of publications consist of two volumes, either of which may be read within a three-hour period. Marietta Johnson discusses "Youth in a World of

Men" and presents her conception of what is wrong and what is right with youth. As part of a program of "organic education" she discusses the type of schools youth should have and the part that recreation, thinking, morals, religion and sex should play in this educational scheme. Although clearly at variance with many of our fond conceptions, the book has a directness of attack and a freshness and enthusiasm in style that makes it worth while reading.

"Social Problems of Childhood" by Dr. Paul H. Furfey, sociologist, Catholic University of America, is an attempt to produce briefly the more important social child problems that our intricate and rapidly changing civilization is forcing to the front. It is the author's conviction "that the neglect of the teachings of Christ is a supremely important factor underlying all social problems. Until these principles are recognized and put into practice there can be no fundamentally satisfactory cure for our social ills. A thorough solution for the social problems of childhood must be sought in the doctrines of Christ."

In this publication, however, Doctor Furfey does not attempt to examine the rôle of the church in social work but rather the rôle of the state. Starting with the thesis that the child must always be dealt with as a spiritual being, the author believes that much insight and wisdom into these problems can be gained by taking cognizance of the knowledge and experience that social research has made available. In successive chapters he discusses these findings of social research and secular court practice. Fairly complete bibliographies are presented at the close of each chapter. The major problems considered are the child and the community, child health, delinquency, mental hygiene, illegitimacy, the subnormal child, recreation, the child and labor, the dependent child and institutions for children. Although written apparently for religious teachers, it has a definite value for the public-school teacher.

#### *Administration:*

All of these fields of problems are as yet rather dimly charted. Ever since the inception of public education we have been confronted by biological, psychological and sociological problems. Only they were not recognized as such. To-day they are pressing and serious and have been definitely recognized. In public-school activity much of the success that will ultimately be achieved depends upon the care with which we recognize problems and gather exact data for study and interpretation. The basic necessity for careful observation and objective information is obvious.



This brings the discussion back to the field of administration.

One of the essential facilitating activities of administration is the keeping of records whereby important facts may be disclosed and used as a basis for intensive study. These activities are classified as child accounting. Slowly but surely the basic importance of adequate records is being recognized by the administrator. Considerable attention in recent years has been given by several states to the organization of this activity. Michigan, Indiana, Iowa, New Jersey and Colorado are striking examples. The literature in the field has been meager. Two publications in book form<sup>1</sup> have presented and considered the general problem and its organization. Recently Dr. Arch O. Heck, author of one of the earlier studies, has written a second book in this field for the classroom teacher. In his first effort the administrative terminology was used. In the present volume the parlor title of "Administration of Pupil Personnel" has been substituted with a subtitle including "pupil accounting" by way of translation. Apart from the tendency in organization to develop confusion by using similar descriptions for two diverse activities—personnel<sup>2</sup> and child accounting—there is no particular objection to the softer terminology.

"Administration of Pupil Personnel" was written for teachers in order to acquaint them with the value of records and the relation of record keeping to other phases of the educational process, particularly administration, with which the teacher is not always as familiar as she might be. The traditional reaction of teachers to the necessity for records is again partly due to neglect of this important activity in their training and partly to inadequate means of purpose developed by administration to interpret for them. Again, as Doctor Heck points out, record keeping developed through the process of accretion and much that is old and useless has been continued because it had the hoary backing of tradition. In other words, it is apparently easier to keep on doing certain useless things than to call forth enough energy and courage to discontinue them.

#### *Administration of Classes*

There are twenty-one chapters in this book covering the various aspects of child accounting and its allied problems. The field of child accounting, compulsory education, child labor, non-attendance, the census and the various types of records are presented simply and discussed care-

fully. Appraisal studies such as age-grade progress and promotion and failure, are given due consideration. School marks, school adjustments and the different plans for the classification of children are also treated. Since the book is intended primarily for teachers, certain technical aspects of administration have not been considered. Taken as a whole, this publication has decided merit and should be of great value in training the teacher to a proper appreciation of this important activity.

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### Supervision as an Economic Measure

That adequate supervision is not only a professional need in North Carolina but also an economic measure is the belief of the legislative committee of the North Carolina Education Association. In the opinion of the committee, according to comment in the *North Carolina Teacher*, the increased progress of children working with teachers who have the help of supervisors is so much greater than is possible without supervision that a provision for financing a supervisory program is an economic measure. If children make one-fourth more progress as the result of adequate supervision, it is a good investment purely from the monetary standpoint.

### Reasons for Increase in the College Enrollment

The enrollment of students of college grade in institutions of higher learning has grown from 157,000 in 1890 to more than a million in 1926, the last year for which returns are available, Dr. James H. S. Bossard, professor of sociology, University of Pennsylvania, points out in a study appearing in *School and Society*.

According to Doctor Bossard, three factors that have contributed to this remarkable growth are: the prevailing spirit of American life, quizzical, analytical, curious, unfettered; the increasing economic prosperity of the nation; the increasing recognition of the money value of a higher education both to the student and to society.

<sup>1</sup> Child Accounting, Arthur B. Moehlman, 1924.

<sup>2</sup> A Study of Child Accounting Records, Arch O. Heck, 1925.

<sup>3</sup> The personnel activity as commonly defined in public-school administration heretofore has been used to connote the administration of all professional and nonprofessional employees.



# Practical School Administration:

## Facilitating the Purchase, Storage and Delivery of Supplies\*

BY PHILIP LOVEJOY, ASSISTANT SUPERINTENDENT OF SCHOOLS, HAMTRAMCK, MICH.

**I**N A unit functional organization in which all departments are definitely working toward the facilitation of instruction, a simplified technique needs to be adopted. In reorganizing the finance and purchasing departments of the Hamtramck Public Schools one of the most important problems I had to consider was the adoption of such a technique. Purchasing in particular needed to be systematized.

### Course of Study First Adopted

The first step was the adoption of a course of study developed by the department of creative instruction, on the basis of objective evidence, to meet the needs of Hamtramck as an industrial community. When the educational goals had been determined and a course of study planned accordingly, the next step was the creation of standards of distribution for supplies, books and equipment. In this connection it may be noted that the Hamtramck board of education furnishes free of charge all supplies, books and equipment essential for the facilitation of the instructional process. Standards of distribution in the Hamtramck schools have been developed according to the subjects taught in the six major fields of each

division of the school system. The fine arts department in the elementary school is here presented as an example of the manner in which the distribution is carried out.

Since the department of creative instruction has developed the course of study it naturally knows best just what materials are necessary to accomplish the desired results. Each pupil must have so much of this and so much of that. Let us glance at the standard of distribution of supplies. There are 232 items in the list. Picking at random we find statements like those shown in the accompanying table which depicts where and in what quantities the supplies are to be distributed.

### Accurate Estimate Possible

If the child accounting department has accurate figures it will be able to prophesy for the following year the probable number in any specific department.

The individual school makes no difference so far as purchase is concerned. It is only necessary to know the total number in the city because, at this junction, quantity purchasing is desired in order to get better price advantage. The figures indicate that in the school year, 1930-1931, there

\*The second half of Mr. Lovejoy's article will appear in the next issue of *THE NATION'S SCHOOLS*.

STANDARD OF DISTRIBUTION OF SUPPLIES FOR THE  
FINE ARTS DEPARTMENT OF THE HAMTRAMCK ELEMENTARY SCHOOL

Item	Item Code	Unit	Grade											
			1		2		3		4		5		6	
			B	A	B	A	B	A	B	A	B	A	B	A
Colored construction paper 9 by 12 inches, 80-lb. Bradley or equiv. medium blue..	419	sht.	1P	1P	1P	1P	1P	1P	1P	1P	3/4P	3/4P	3/4P	3/4P
Manila cream, 48-lb., 9 by 12 inches.....	759	sht.	12P	12P	12P	12P	5P	5P	5P	5P	3P	3P	3P	3P
Paint oil, red, 1/2 by 2 inches .....	116	tube									1 1/2P			
Water color refills, yellow-gamboge, etc. ...	117	1/2 pan							1/4P	1/4P	1/2P	1/2P	1/2P	1/2P
Needles, darning, large eye, 3-inch .....	330	doz.	3R	3R	3R	3R	3R	3R	3R	3R				
Paste .....	388	gal.	015P											

For all grades



therefore, will remain in the building stock rooms. That we may know exactly the condition of this room at all times a building running inventory card is kept. This card is in a visible file 4 by 6, double hung, 720 to a book. It is

[illegible]

*Diagram 4.*

ruled as in Diagram 2. Supplies are recorded by individual items, even colors remaining separate in classification.

When goods arrive from the central stock room or directly from a vendor, the record of their arrival is entered on a card with date and source of supply. The balance is then recorded. As goods are delivered to the individual teacher on requisition from teacher to principal (see Diagram 3) withdrawals are recorded and the running balance carefully maintained.

The visible file book is used rather than steel file because of its mobility. Furthermore, it will fit in a desk drawer. The cards for supplies are white. A similar card, ruled, is maintained for

[illegible]

*Diagram 5.*

textbooks. This is on pink cardboard while that for equipment is yellow. These are illustrated in Diagram 4 and Diagram 5.

By means of these three cards in not more than five portable files the building assistant principal

knows how many supplies are on hand and, in the case of books and equipment, exactly where they are in the building. Thus, it is easy to strike off a balance at any time and forward it to the central office. Better still, the entire book may be sent for a periodic check since in the central office there is maintained a permanent file of equipment. This is illustrated in Diagram 6. When equipment is delivered it is recorded on this permanent card. The central office makes a record of the delivery of equipment but, of course, does not attempt to make any record of its use; hence, the need of periodic reports on the constructive consumption of these goods.

In the central stock room which is adjacent to the purchasing department two records are necessary. The first is a bin inventory illustrated in Diagram 7, while the second, shown in Diagram 8, is a total running inventory which may also serve as an index of delivery.

The bin inventory card is a simple form and is

[illegible]

*Diagram 6.*

appended to the front of the bin in which that respective item is stored. When goods are received by the stock keeper from the vendor, he has but to write the date, the quantity received and the source on the left hand side of the card and place the goods in the proper bin. Withdrawals are placed on the right side of the card and the running balance is always at hand. It is a simple thing to write in pencil a withdrawal of fifty units from the bin so that the only count necessary is that of the annual check-up to ascertain the correctness of the subtractions during the year.

The card (Diagram 8) used in the purchasing department precludes the necessity of going to the stock room to find out if any particular item is on hand. While the card is maintained primarily for costs, it also becomes a running total inventory of all goods on hand. It is filled out by item—one card for one item and size within the item. The source, number of units and total



cost are recorded. The unit cost is figured and transportation added so that the charge cost for the pricing of the requisitions prior to posting in this appropriation ledger is always up to date.

BIN INVENTORY					
Item		Code		Unit	
Paper Howard		439		Rm.	
Date	Quantity Received	Source	Issued		Balance
			Requis.	Quantity	
Oct 1	2960	B-P-L	4069	60	2900
Oct 3			5167	150	2750

Diagram 7.

The right hand side of the card serves as an index of requisitions delivered and also gives the running balance in the stock room. The upper figure is the number of the requisition on which the goods were delivered while the lower figure gives the total units sent out on that requisition.

Requisition				Issued to stock				The number of requisition number										Balance	
Date	Requisition	Unit	Cost	Quantity	Unit	Cost	Quantity	1	2	3	4	5	6	7	8	9	10	11	12
Apr 10	177	20.00	3.50	100	100	3.50	100											25.1	25.10
																		2.80	2.80
																		2.50	2.50

Diagram 8.

The clerk can at the same time figure the unit costs and place it on the requisition so that the total may be posted in the appropriation ledger. To cut down the cost of forms this particular record was made on a sheet of paper, 8½ by 11 inches, ordinary ruled composition paper.

(To be continued.)

## Educational Opportunities in the City and in the Country

The striking differences in the educational advantages that are offered to children in the city and those in the country were vividly set forth by J. W. Crabtree, secretary, National Education Association in a paper given at a country school reunion near Elmwood, Neb., August 31.

"The city can hold a nine months' school each year while the average for the rural district is seven months," said Mr. Crabtree. "There is 7.7 per cent illiteracy in rural districts and 4.4 in the city. The difference in health defects is startling. Twenty-three per cent of the rural school children have eye defects as against 12 per cent of city school children; 48 per cent of the children in rural districts have defective teeth as against 33 per cent of children in the city. Only 25.7 per cent of the rural children from fifteen to eighteen years of age are in the high school as compared with 71.1 per cent in the city.

"Do not infer from these figures that parents on the farm are less interested in the welfare of their offspring than are parents in the city. They are simply less able to do so well by them, and they have been slow to learn how to promote and protect their own interests."

## The Need for Educational Interpretation

If education is to take its place as a determining factor in our democratic life it will be obliged to put more time and money into educational interpretation, is the opinion expressed by Joy Elmer Morgan, editor, *Journal of the National Education Association*, in an address before the National Council of Education in Atlanta, Ga.

"The term educational interpretation is broader than the term publicity," he said. "It includes our efforts to visualize and dramatize the purposes of administration and the findings of research into the habit of thought of the average man and woman. The advance of education waits on interpretation.

"The qualifications of the specialist in educational interpretation are four: He must understand human nature in all its phases; he must know the schools, must appreciate their purposes, problems and achievements; he must understand the channels through which interpretation is carried on and the arts that are used therein; he must know civilization itself, must have a vision of the part that education has played and might play in the creation of a better world."

# "I don't want to go home!"

WE take extra pains to make the kindergarten room pleasant and friendly so that the transition from home-life to school-life will not be too abrupt. Certainly it is not too much to hope that happy hours in the kindergarten will help to prevent the old antagonism towards teachers and teaching from forming in the child's mind.

Novel "game floors" constructed of *Sealex* Linoleum are a new way to make the kindergarten room more interesting to the little pupils. Units of almost any shape and size may be cut out of different colored pieces and *inset* into the main body of the floor. Any design which will aid in the children's games is installed as a permanent element. The use of cheerful contrasting colors makes these play floors extremely attractive in appearance.

In other parts of the school, too, this idea of specially designed insets may be used effectively. The school motto or emblem may be made the central feature of the floor design in the main entrance hall.

In the school library or the principal's office, *Sealex* Treadlite Tiles—in made-to-order designs—help to create an atmosphere of distinction. And for economical heavy-duty service in classrooms, corridors and gymnasium, there is nothing to compare with a resilient, durable floor of *Sealex* Linoleum.

Let us tell you how these modern resilient floors have been used to enhance the appearance of both new and old school buildings. Write our Department T for booklet "Facts You Should Know About Resilient Floors for Schools."



**A**UTHORIZED Bonded Floors contractors near you are picked firms. They have been specially selected for their knowledge of modern linoleum installation methods; the *Sealex* floors they install according to Bonded Floors specifications are backed by our Guaranty Bond against repair expense due to faulty workmanship and material.

**BONDED FLOORS**  
Resilient Floors Backed  by a Guaranty Bond

# Index Numbers for School Supply Prices

*Cost of materials entering into the manufacture of school supplies is at the highest point this year; commodity prices show a sharp increase*

BY HAROLD F. CLARK, PROFESSOR OF EDUCATION, TEACHERS COLLEGE, COLUMBIA UNIVERSITY, AND  
JOHN GUY FOWLKES, PROFESSOR OF EDUCATION, UNIVERSITY OF WISCONSIN

THE index of school supply prices changed only slightly during the past month. The prices of the basic materials are marked by varied fluctuations which, when combined into the single index, counteract each other.

The preliminary index figure for September is 0.5 points higher than the corresponding figure for September, 1928. The cost of the materials entering into the manufacture of school supplies is at the highest point this year. The lowest point reached by the school supply index for the current year was 94.2 during February.

Commodity prices as a whole have increased rather sharply. The United States Bureau of Labor statistics reports 98.0 for the July index of wholesale prices. This is an increase of 1.6 points over the corresponding figure for June. In the same index, paper prices were steady.

It must be remembered that the supply index does not indicate present or past prices directly

paid by school purchasing agents to the supply houses. The index, to be of any value in predicting price trends, necessarily is based upon the prices of the basic materials of school supplies.

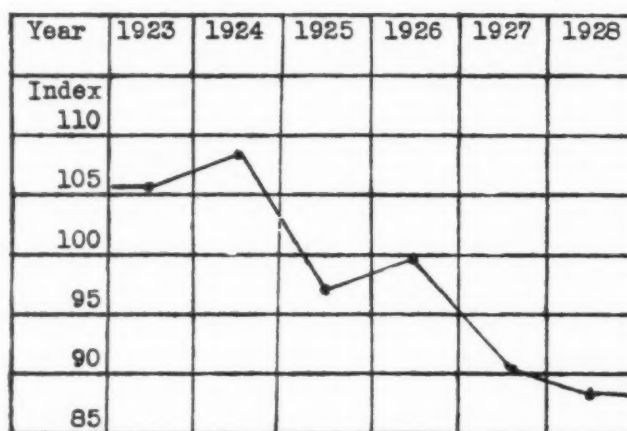


Chart 2. Annual index of the prices of instructional supplies.

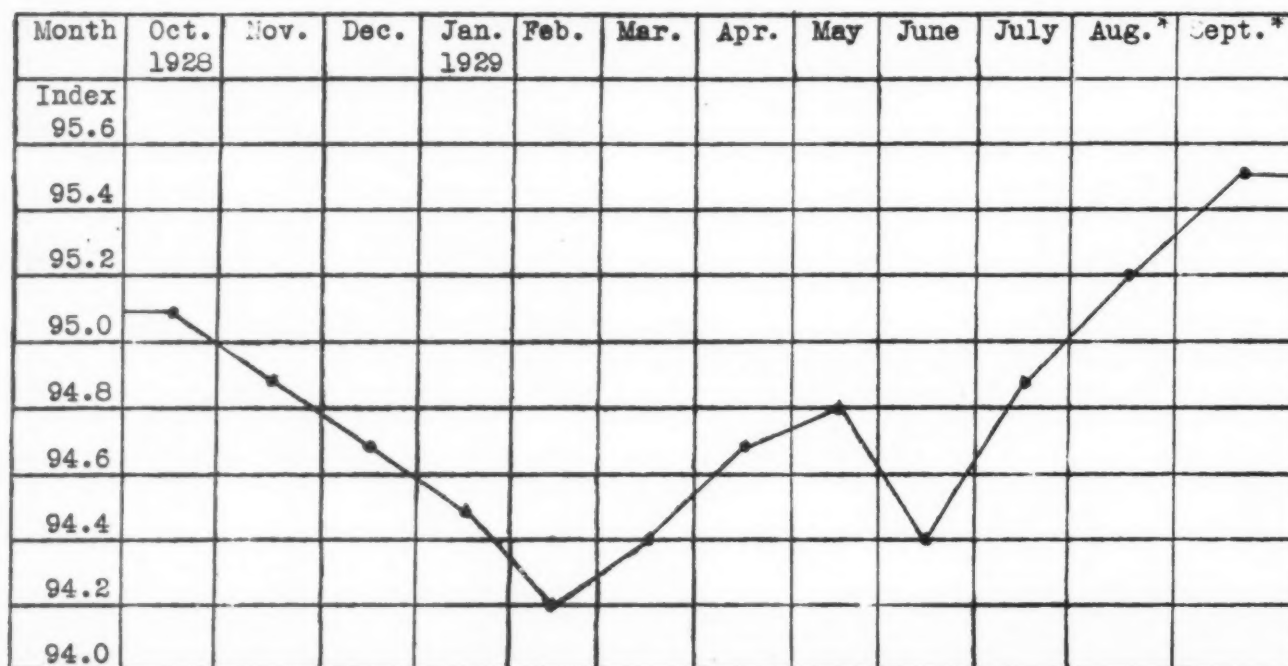


Chart 1. Monthly index of prices of instructional school supplies. \*Not final.



# Then the door closes AUTOMATICALLY

FAHRENHEIT

160  
DEGREES

140

130

120

110

100

90

80

70

60

50

40

30

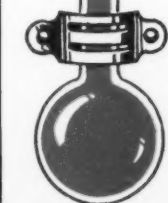
20

10

0

10

20



International Fire  
Prevention Week  
OCT. 6th to 12th

## Certain protection—

As soon as the temperature reaches 160 degrees your FyeR-Wall doors close tight—*automatically*.

They're made of heavy corrugated galvanized steel sheets with thick sheet-asbestos between. They're guaranteed for 25 years. There's no upkeep cost and they save 15% to 25% of your yearly insurance premiums.

There is a type of FyeR-Wall door fitted with R-W automatic hardware, to meet every condition. And they cost no more than tin-clad doors!

FyeR-Wall doors and automatic hardware carry the label of the Underwriters Laboratories. They protect life and property. Prevent spread of fires.

Send for catalog of complete line.

## Richards-Wilcox Mfg. Co.

A Hanger for any Door that Slides

New York • • • AURORA, ILLINOIS, U.S.A. • • • Chicago  
Boston Philadelphia Cleveland Cincinnati Indianapolis St. Louis New Orleans Des Moines  
Minneapolis Kansas City Los Angeles San Francisco Omaha Seattle Detroit  
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## Your Every-day Problems

JOHN GUY FOWLKES, THE UNIVERSITY OF WISCONSIN, DIRECTOR

*This department will be devoted to an informal discussion of problems arising in the every-day life of principals and superintendents. The following discussions are based on answers to inquiries received recently by the director of this department. Similar inquiries are invited, and should be addressed to Dr. John Guy Fowlkes, Department of Education, University of Wisconsin, Madison, Wisconsin.*

### What Does the Layman Know About Schools?

What does the public know about schools? Where does it get its information?

The last year has seen a revival of interest in school publicity and in the relation of the layman to schools. Much of this new concern over school publicity seems to be directed at what laymen know about schools and where they get their information. The following list of questions answered by 146 men in three communities having populations of less than 2,500 in one of the Great Lakes states furnishes some interesting data.

1. What is your occupation? Farmer, 40; laborer, 72; merchant, 8; skilled laborer, 22; professional, 3.

2. Are you married? Yes, 140; no, 6.

3. Do you have children attending the public schools at the present time? Yes, 107; no, 39.

4. Did you ever attend the public schools in America? Yes, 91; no, 55.

5. What grade in the public schools did you complete? Elementary, 109; high school, 31; college, 4.

6. Have you graduated from college? No, 142; yes, 4.

7. What grades are included in the elementary grades in your school system? Eight, 130; six, 16.

8. What grades are included in the junior high school in your school system? No junior high school, 130; three, 14; four, 2.

9. What grades are included in the senior high school in your school system? Four, 130; three, 12; four, 2; six, 2.

10. At what age are children permitted to enter the kindergarten in your school system? Range, 4 to 6.

11. Does your board of education employ a school nurse? No, 146.

12. How many members are on your board of education? Range, 5 to 11.

13. For how long a term are the members of your board of education elected? Two years, 61; three years, 74; six years, 11.

14. Do you have a parent-teachers' organization in your school? Yes, 146.

15. How many weeks each year is your school in session? Thirty-six weeks, 106; eighteen weeks, 30; forty weeks, 10.

16. How many pupils are enrolled in the schools of your city? (1) Range, 200 to 640; (2) range, 325 to 500; (3) range, 325 to 600.

17. How many teachers are employed in your schools? (1) Range, 6 to 10; (2) range, 7 to 12; (3) range, 8 to 15.

18. What is the average salary paid to your women teachers? (1) Range, \$900 to \$1,800; (2) range, \$875 to \$1,705; (3) range, \$1,000 to \$1,775.

19. What is the average salary paid to your men teachers? (1) Range, \$1,500 to \$2,500; (2) range, \$1,750 to \$3,000; (3) range, \$1,450 to \$2,800.

20. What is the salary paid to the superintendent of your schools? (1) Range, \$2,250 to \$2,500; (2) range, \$2,400 to \$2,800; (3) range, \$2,150 to \$2,700.

21. Do the members of your board of education receive a salary? No, 137; yes, 9.

22. Do your high-school teachers receive more or less salary than your grade teachers? More, 146.

23. Does your board of education require a life certificate before a teacher can teach in your elementary grades? Yes, 127; no, 19.

24. Does your board require a bachelor's degree from a college or university before a teacher can teach in your high school? Yes, 130; no, 16.

25. Is your school accredited by the state university? Yes, 80; no, 66.



## More Than Mechanical Equipment

A satisfactory installation of heating and ventilating equipment requires more than a series of mechanical units. It requires engineering skill and service. These intangible factors are just as important as silent operation, an efficient radiator, up-to-date methods of temperature control, and other features which are embodied in the modern PEERVENT Unit.

This Company offers the service and skill of the *Pioneers* in unit heating and ventilation. Peerless Units installed *eighteen years* ago are still giving satisfactory service, and the improved PEERVENT Unit of today is backed by *forty years* of specialized experience in heating and ventilating. For catalog, please address

PEERLESS UNIT VENTILATION CO., INC.  
Bridgeport, Conn.

*Sales and service representation in all  
principal cities from coast to coast.*





26. Is your school approved by the North Central Association of Colleges and Secondary Schools? Yes, 107; no, 38.

27. What was the total amount of money spent last year to run the schools of your city? (1) Range, \$7,500 to \$110,000; (2) range, \$42,000 to \$97,000; (3) range, \$12,000 to \$162,000.

28. What is the average number of pupils per teacher in the elementary grades of your school? Range, 15 to 58.

29. What is the average number of pupils per teacher in the senior high school? Range, 12 to 42.

#### *Many Free Textbooks Provided*

30. Does the board of education furnish free textbooks to the children in the elementary grades of your school? No, 140; yes, 6.

31. Does the board of education furnish free textbooks to the children in the junior high school? No, 141; yes, 5.

32. Does the board of education furnish free textbooks to the children in the senior high school? No, 145; yes, 1.

33. How many classes per day do the teachers in your high school teach? Range, 3 to 7.

34. Does your board of education employ a grade supervisor? No, 143; yes, 3.

35. How many books are in your school library? Range, 100 to 12,000.

36. Does your board of education employ a full-time librarian? No, 142; yes, 4.

37. Does your school have a boys' glee club? No, 71; yes, 64.

38. How many members in your school band? Range, 14 to 60.

39. Does your school publish a school paper? No, 137; yes, 9.

40. How often is it published?

41. Does your school publish a school annual? No, 142.

42. Do your school authorities permit school clubs or societies to meet in the evening at the school building? Yes, 114; no, 32.

43. Are these clubs permitted to meet in the evening when there is school on the following day? Yes, 117; no, 28.

44. Are there certain scholastic requirements that must be met before a boy can take part in athletic contests with other schools? No, 103; yes, 42.

45. Do your school authorities permit dancing in your school building? No, 70; yes, 76.

46. Do your school authorities require a physical examination before a boy can take part in athletic games against other schools? No, 107; yes, 39.

47. Does your school pay doctor and hospital bills for boys that are hurt during football games? No, 120; yes, 24.

48. From which of the following do you get most of your information regarding schools? Underscore one. Teachers, 5; pupils, 47; newspapers, 20; parent-teachers' association, 0; friends, 0; business men, 54; by visiting school, 0; board members, 7.

49. How many times have you been in a classroom and seen a teacher teach since you left school? Range, 0 to 20; never, 131.

50. How many times during the last year have you discussed school matters with any public-school teacher? Range, 0 to 25; never, 116.

51. How many times have you attended meetings of the parent-teachers' association during the last year? Range, 0 to 7; never, 111.

52. How many issues of the school paper have you read in the past year?

53. How many times during the past year have you been inside any of your school buildings? Range, 0 to 35; never, 101.

54. Do you read the school items in your local newspaper? Yes, 116; no, 30.

55. How many times during the last year have you discussed school matters with a member of your board of education? Range, 0 to 10; never, 127.

56. How frequently do you discuss school matters with school pupils? Underscore one. Daily, 81; twice a week, 20; weekly, 16; seldom, 14; never, 15.

#### *Discussion of School Matters*

57. How frequently do you discuss school matters with friends? Underscore one. Daily, 0; twice a week, 60; weekly, 78; seldom, 2; never, 4.

58. How frequently do you discuss school matters with business men? Underscore one. Daily, 2; twice a week, 4; weekly, 80; seldom, 46; never, 11.

59. If there were conflicting opinions in your community regarding the need for additional school buildings, which of the following sources of information would influence you the most in forming an opinion? Underscore one. Newspaper, 91; pupils, 0; friends, 6; business men, 24; teachers, 0; parent-teachers' association, 0; member of board of education, 2; your superintendent, 7; educational lecturer from outside your community, 0.

60. If there were conflicting opinions in your community regarding the conduct of boys and girls while in school, which of the following sources of information would influence you the

# WINTER IS COMING

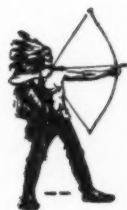
and hundreds of active feet will play havoc with clean floors necessitating constant re-cleaning and attention.

No matter how pressed for time your janitors may be,



will always give them cleaner floors at a saving of time and labor.

An important fact too, is the protection against accidents and injury resulting from slipperiness, for Wyandotte cleaned floors are safe for the most active and busy students.



Ask your supply man for  
"WYANDOTTE"

---

The J. B. Ford Co. Sole Mfrs. Wyandotte, Michigan

most in forming an opinion? Underscore one. Newspaper, 17; pupils, 64; friends, 0; business men, 31; teachers, 15; school paper, 0; parent-teachers' association, 0; member of board of education, 2; your superintendent, 14; educational lecturer from outside your community, 0.

61. If there were conflicting opinions in your community regarding the advisability of retaining a certain teacher for next year, which of the following sources of information would influence you the most in forming an opinion? Underscore one. Newspaper, 0; pupils, 76; friends, 0; business men, 56; teachers, 0; school paper, 0; parent-teachers' association, 0; member of the board of education, 0; your superintendent, 12; educational lecturer from outside your community, 0.

#### *Influential Forces Shown*

62. If there were conflicting opinions in your community regarding the advisability of employing a vocational guidance counselor, which of the following sources of information would influence you the most in forming an opinion? Underscore one. Newspaper, 47; pupils, 0; friends, 2; business men, 64; teachers, 0; school paper, 0; parent-teachers' association, 0; member of board of education, 0; superintendent, 31; educational lecturer from outside the community, 0.

63. If there were conflicting opinions in your community regarding the unsportsmanlike way in which your coach trains his athletes, which of the following sources of information would influence you the most in forming an opinion? Underscore one. Newspaper, 94; pupils, 16; friends, 0; business men, 27; teachers, 2; school paper, 0; parent-teachers' association, 0; member of board of education, 0; superintendent, 1; educational lecturer from outside your community, 0.

64. If there were conflicting opinions in your community regarding the advisability of establishing a dental clinic, which of the following sources of information would influence you the most in forming an opinion? Underscore one. Newspaper, 71; pupils, 7; friends, 0; business men, 32; teachers, 0; school paper, 0; parent-teachers' association, 0; member of board of education, 0; superintendent, 27; educational lecturer from outside your community, 0.

65. If there were conflicting opinions in your community regarding the desirability of increasing teachers' salaries, which of the following sources of information would you consider the most in forming an opinion? Underscore one. Newspaper, 74; pupils, 0; friends, 0; business men, 52; teachers, 0; school paper, 0; parent-teachers' association, 0; member of board of education, 2; superintendent, 15; educational lec-

turer from outside your school community, 0.

66. If there were conflicting opinions in your community regarding the desirability of increasing the number of teachers, which of the following sources of information would influence you the most in forming an opinion? Underscore one. Newspaper, 61; pupils, 30; friend, 0; business men, 30; teachers, 0; school paper, 0; parent-teachers' association, 0; member of board of education, 0; superintendent, 24; educational lecturer from outside your community, 0.

67. If there were conflicting opinions in your community regarding the advisability of spending a considerable amount of money for playgrounds and equipment, which of the following sources of information would influence you the most in forming an opinion? Underscore one. Newspaper, 94; pupils, 0; friends, 0; business men, 20; teachers, 0; school paper, 0; parent-teachers' association, 0; member of board of education, 0; superintendent, 31; educational lecturer from outside the community, 0.

When one peruses the data just presented, he is impressed by two illuminating facts or conditions. Insofar as these 146 men are typical of the three communities they represent, the laymen are woefully untutored concerning the local school systems in the communities in which they live. Furthermore, from the data just offered, the newspaper is decidedly the most important factor in the formulation of lay opinion concerning educational matters in these communities. Further studies are being made in other communities to ascertain whether the conditions suggested here are in any way prevalent. If they are, it is evident that superintendents of schools would do well to make more definite provision for the presentation of educational matters to the lay public in a professional manner.

### Lower Tuition Makes Students Prefer State Colleges

Statistics compiled by Walter J. Greenleaf, government specialist in higher education, show that an education can be obtained at the least cost in a publicly supported school, and that this type of schools have a larger registration than any other type. Mr. Greenleaf's figures show that there are 106 publicly controlled colleges which enroll 40 per cent of all college students; 142 private nonsectarian institutions which enroll 31 per cent, and 376 church controlled institutions which enroll the other 29 per cent. Mr. Greenleaf estimates that a thrifty student may keep his total expenses for the year under \$300.





Model E, G&G Telescopic Hoist equipment in use at Julia Richman High School, New York. William H. Gompert, Municipal Architect.

# Annual ROLL CALL



**Telescopic Hoist**  
With Automatic Stop and Gravity Lowering Device

## In the Nation's Schools

FORTY-FOUR states are now represented in the list of schools using G&G Ash Removal Equipment—practically every state where coal heating apparatus is employed in the schools. Heading the list this year we find the following totals:

NEW YORK	423 Schools
PENNSYLVANIA	190 Schools
OHIO	180 Schools
NEW JERSEY	150 Schools
MICHIGAN	113 Schools
MASSACHUSETTS	106 Schools
ILLINOIS	74 Schools
IOWA	68 Schools
CONNECTICUT	65 Schools
KANSAS	59 Schools
MINNESOTA	54 Schools
MISSOURI	49 Schools
MARYLAND	36 Schools
NEBRASKA	26 Schools
WISCONSIN	26 Schools
DIST. COLUMBIA	23 Schools
INDIANA	23 Schools
KENTUCKY	15 Schools

G&G Ash Removal Equipment is now standard equipment with Boards of Education in Pittsburgh,

Des Moines, Seattle, Louisville, Kansas City, Mo., Kansas City, Kans., Cleveland, Baltimore, Jersey City, Newark, Boston and New York.

Available in hand and electric models, with and without overhead crane.

The electric models are particularly favored in schools. G&G Ash Removal Equipment insures complete safety at all times because sidewalk opening is fully protected by rigid doors. This safety feature, plus unequalled economy in operation and long life, has resulted in the selection of this equipment for school after school throughout the Nation, and it is being repeatedly specified by leading architects. Write for catalog.



Model D, G&G Electric Hoist equipment in use at a public school. Note overhead crane feature permitting dumping of ashes direct into truck.

G&G Ash Removal Equipment is also widely used in Banks, Churches, Hospitals, Hotels, Office Buildings, Theatres, Telephone Buildings, Stores, Factories, Garages, etc. Electric and hand-power models for special uses.

## GILLIS & GEOGHEGAN

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63 Years of Service

New York, N. Y.

## News of the Month

# New Administration Building Planned by N. E. A.

**P**LANS have been completed for the construction of a new administration building for the National Education Association at its headquarters in Washington, D. C.

The new structure will be seven stories high and will adjoin the present four-story building on the east. The new building will replace the several temporary structures now owned by the association.

The total cost of the project will be about \$400,000 and when completed the two buildings will be joined as one. In the basement will be the shipping and mailing rooms, the multigraph section and the heating plant. The first floor will contain the offices of the secretary and of the business division in addition to an assembly hall and two large conference rooms.

The second floor will be occupied by the legislative division, the accounts division and the division of records and membership. On the third floor will be the offices of the departments of superintendence, elementary-school

principals and secondary principals. There also will be housed the division of publications and the division of classroom service. The research division and its library will occupy all of the fourth floor.

On the fifth floor will be the headquarters of the National Congress of Parents and Teachers and of the International Kindergarten Union. The sixth floor will be occupied by the typing section of the business division. Other educational noncommercial organizations will rent offices on the seventh floor.

The tremendous growth of the association membership since 1917 has made the new building imperative, officers announce. When the headquarters were first established in 1917 under the leadership of the newly elected secretary, J. W. Crabtree, there were less than 80,000 members and only three people were employed on the headquarters staff. To-day the staff numbers 120 and there are about 201,000 members in the association.

Frank I. Cooper, Boston, is architect for the building.



Above is shown the architect's drawing of the new seven-story addition to the administration building of the National Education Association, Washington, D. C.

# RESULTS OF QUESTIONNAIRE SENT TO THE ORTHOPTEROUS INHABITANTS OF SOME OF OUR BEST SCHOOLS

## QUESTIONNAIRE

**Q.** We understand that schools are your favorite abodes. Is this true?

**A.** *Yes. We like schools because they are unoccupied so much of the time, leaving us foot-loose and fancy free.*

**Q.** We understand that microbes are bitterly opposed to the installation of linoleum in schools. Is this true?

**A.** *You bet! Linoleum completely covers all floor cracks, obliterating our dwelling places and playgrounds.*

**Q.** We understand that the microbe world is especially hostile to the installation of W. & J. Sloane Linoleum and that the well-known W. & J. Sloane thistle trademark is anathema to a microscopic organism. Is this true?

**A.** *It certainly is. We have found from experience that in addition to the reasons for making us dislike all linoleum, W. & J. Sloane Linoleum has a uniform texture and super-smooth finish which make it exceedingly hazardous for us to venture upon its surface.*

**Q.** What do you do when W. & J. Sloane Linoleum is installed in a school where you are living?

**A.** *There is only one thing to do — move somewhere else.*



*This book will show you why floors of W. & J. Sloane Linoleum are desirable. Write for free copy. Advertising Department, W. & J. Sloane, 577 Fifth Avenue, New York City.*

### Survey Among Microbial Dwellers in Many Seats of Learning Reveals Deep-Rooted Antipathy Towards Linoleum in General and W. & J. Sloane Linoleum in particular

The super-smooth surface of W. & J. Sloane Linoleum, obtained by double-waxing at the plant, not only makes this floor exceedingly unpopular with insects of all kinds but makes it possible for the linoleum to be used as soon as laid and adds to the wear no end.

School officers and members of school boards will find in our book: "Linoleum—What it is—How it is made in the W. & J. Sloane Plant", many other reasons—sanitary, economic and decorative—for using W. & J. Sloane Linoleum. We will gladly send you a copy on request. W. & J. Sloane Mfg. Company, Trenton, New Jersey.

## W. & J. SLOANE LINOLEUM



## News of the Month

### Suggestions Are Offered for Education Week Programs

American Education Week, sponsored jointly by the National Education Association and the American Legion, will be observed this year from Armistice Day, November 11, through Sunday, November 17.

By means of programs arranged especially for school and organization presentation it is hoped that the purpose of the week, that of better acquainting the public with the work, ideals, achievements and needs of the schools, will be fulfilled.

Each day of the week has been dedicated to one of the seven cardinal objectives of education as follows:

Monday, November 11—Armistice Day; Education for Faithful Citizenship Day.

Tuesday, November 12—Home and School Day; Education for Worthy Home Membership.

Wednesday, November 13—Know Your School Day; Education for Master of the Tools, Technics and Spirit of Learning.

Thursday, November 14—School Opportunity Day; Education for Vocational and Economic Effectiveness.

Friday, November 15—Health Day; Education for Health and Safety.

Saturday, November 16—Community Day; Education for the Wise Use of Leisure.

Sunday, November 17—For God and Country Day; Education for Ethical Character.

In preparing programs for use by schools and organizations during the week, the National Education Association has given the following suggestions for carrying out the schedule:

Monday, Armistice Day—This is a good time to emphasize the advance in world progress since the war and to show the part that education has had in that advance. Special programs may call attention to the Pact of Paris and the responsibility of the school for promoting world goodwill and understanding. Call attention to the leadership of World War veterans in the movement to avoid future wars through education. Emphasize the ideal to live for loved ones, for public duty, and the rights of men, as well as to die for them. On Armistice Day magnify faithful citizenship. Show how schools emphasize fair play, justice, cooperation, integrity, patriotism and citizenship. Good citizenship comes from within. It is an expression of fine ideals and worthy ambitions.

Tuesday, Home and School Day—Show what schools do to improve homes and what homes do to improve schools. Note that the home lays the foundation upon which the school builds and that the school tends to lift all homes to higher levels. Show how the school encourages community planning. On this day let there be exhibits of work in home-making education, parent education, home design, garden design. Schools wishing to emphasize a special theme each year may well choose Education for Worthy Home Membership as the 1929 theme.

Wednesday, Know Your School Day—Let everyone plan to visit the school in the neighborhood in which he lives or works. Announce well in advance that special

programs and exhibits will be open so that all who wish may spend an hour or two at the school. Such visits create understanding and goodwill. Point out ways in which schools are improved. Call attention to better buildings and larger playfields. Show how the curriculum is vitalized to meet the new demands of to-day's life. Call attention to the increased training required of teachers; to the large enrollments in high school and college; to the growing stability and efficiency of school administration and supervision. Let every citizen appreciate the school as an institution which belongs to him.

Thursday, School Opportunity Day—On this day show what the schools do to help young people discover and train their talents. Schools inculcate the following concepts essential to the highest vocational and economic success: That happiness depends in large part upon one's choice of a suitable vocation; that advancement in one's vocation requires hard work, keen interest, ability to carry on, the proper amount of initiative, and the right attitude towards one's employer and fellow workers; that the ability to judge the quality of one's work and find ways to improve it is essential for success; that the worker should possess tact and courtesy in dealing with employer and fellow workmen.

Friday, Health Day—On this day show what the school does to promote physical vitality, good health and habits of safety. Show the relation of good health to excellence and happiness of life. Note the need for safety in an age when machinery and high speed are everywhere. Note that modern life demands a high degree of physical and mental fitness. Show the importance of fundamental health habits—eating, exercise, rest, sleeping, elimination and posture. Show how the school helps to establish these habits.

Saturday, Community Day—Show how the school contributes to the improvement of the community. To improve standards schools cultivate tastes in art, music, literature, architecture and sports, which help to make leisure time an asset rather than a liability. Wise communities provide facilities for wholesome leisure activities—libraries, museums, parks, playfields, auditoriums and art galleries. They make the schoolhouse a community center. Good roads help to unify a community. Show what the schools are doing to train young people for the wise use of leisure. Emphasize the importance of out-of-door activities in an age which keeps people indoors in office, shop and factory.

Sunday, For God and Country Day—Ministers of all denominations at this time are glad to emphasize the higher values of education and of living. If invited to school early in the school year, they will be able to gather first-hand material for their sermons. Ethical character is the highest objective of education and of life. In school, ideals of right conduct are emphasized.

Speakers on this day may show that the schools build character by helping each child develop high standards of physical, mental and spiritual fitness; by training him to gather and use data correctly and to weigh evidence; by surrounding him with the true, the good and the beautiful; and by giving him teachers who are cultured, earnest and happy—in short by building into the lives of children the best ideals of health, home, learning, citizenship, vocation and leisure.



*Cleaning Linoleum  
in Class Room.*



*Cleaning Chalk Trays.*



*Cleaning Erasers.*

## When you remodel... or build a new school

**R**EMEMBER that of all the modern advantages that machinery can add to school operation there is none that benefits more people and saves as much money as the Spencer Central Cleaning System.

It cleans continuously... even during class time... the foot prints in the halls are erased with a vacuum pull that sucks all

dirt and dust to a container in the basement.

The degree of cleanliness is greater, the health of teachers and pupils is conserved and the net increase in expense is more than overcome by the saving in time and the saving of paint, books, floor coverings and decorations—because the Spencer Cleaned School is *perpetually clean*.

## THE SPENCER TURBINE CO.

HARTFORD, CONNECTICUT { **CENTRAL  
CLEANING  
SYSTEMS** } REPRESENTATIVES IN 50 CITIES

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*Used by 1500 modern schools — endorsed by leading architects and educators.*



*A Modern Kindergarten—Spencer Cleaned.*



Ask for the new booklet "Modern Cleaning Methods for Modern Schools"

## News of the Month

### Construction Starts for Kenrick Seminary

Ground was broken recently for the new Junior Seminary, which will be erected at a cost of \$1,250,000 on Glennon Drive, St. Louis, adjacent to Kenrick Seminary. The work is scheduled for completion in March, 1931.

In the seminary group will be six buildings, designed to accommodate 350 students and a faculty of twenty. There will be separate structures for administration, dormitories, students, faculty, chapel, convent and power house. The buildings will be connected by ambulatories.

The buildings will follow the modern Spanish monastic architectural style and will be constructed of reinforced concrete with brick exterior, tile roofs and steel casement windows. Tile and terrazzo will be used on the floors and ornamental plaster and birch wainscoting on the walls. In the center of the administration building will be a 175-foot tower.

### Educationists Married

Dr. Margaret M. Alltucker, associate director, and Dr. John K. Norton, director, of the Division of Research of the National Education Association, were married at Stanford University, Calif., August 23.

Doctor Norton has been with the association since 1922 and has attracted wide attention for his outstanding work in various branches of educational research and particularly the field of school finance. Under his leadership the association's research division has grown to include a staff of twenty-five persons.

Mrs. Norton has been best known for her work in curriculum revision, and as secretary of the Commission on the Curriculum of the Department of Superintendence, while the commission was engaged in its five-year study of the entire public-school curriculum.

### California Students Earn Million a Year in Part-Time Work

Estimates prepared recently by the alumni bureau of occupations on the Berkeley campus of the University of California shows that students at the university who do part-time work to help themselves through college earn \$1,000,000 a year, an article in the *Journal of Education* states.

During the last year 5,790 part-time positions were filled by students. Of this number 3,746 were for men and 2,044 for women.

### Course in Aviation for Women Announced by N. Y. U.

New York University is instituting a course in aviation for women this Fall. According to the announcement, the increasing demand by women for an aviation course

prepared especially for them, coupled with the additional interest stimulated by the recent women's air derby necessitated the creation of a women's department in the newly established school at the university, according to announcement in a recent issue of the *Journal of Education*.

The course to be offered will meet the requirements for approved flying schools and will be about the same as that offered to men. It will cover the air conference regulations, aviation engines, including principles of internal combustion, carburetion, cooling, lubrication and ignition, history of aviation, theory of flight, nomenclature, construction, rigging, maintenance, repair, navigation and meteorology.

### President Heads Move to Build School in Mountains

To provide educational facilities for the mountain children living in the sparsely settled region surrounding his fishing camp on the headwaters of the Rapidan River in Virginia, President Hoover has initiated a move to raise funds for the construction of a schoolhouse. He also has undertaken the formation of a local committee to confer with Virginia state authorities in the matter of obtaining a teacher for the school, according to the *Journal of Education*.

### San Diego Military School Adds Another Dormitory to Plant

Construction has been started at the San Diego Army and Navy Academy on another four-story concrete and steel dormitory to be erected at a cost of about \$75,000. The new building, which will be ready for occupancy about January 1, will be the fifth unit in the \$450,000 building program undertaken at the academy.

The dormitory, following the Spanish style of the other academy buildings, will house 100 students. On the first floor will be a large playroom and six classrooms and on the second will be living rooms, matron's quarters and a few bedrooms and studies. The remaining two floors will be occupied by studies and sleeping rooms.

### Ipswich Grammar School Holds Famous Land Grant

Little Neck, at Ipswich, Mass., famous as a summer resort, claims a distinction unique in the annals of land grants in this country, according to the *Journal of Education*.

Little Neck was bequeathed to the Ipswich Grammar School nearly 270 years ago and it is still held by the same self-perpetuating board of "feoffees," who collect ground rent from the owners of the many summer cottages on the peninsula but who may not sell or dispose of the land in any way. In 1660 John Payne, the son of





# Winter...

but it can be  
summer inside

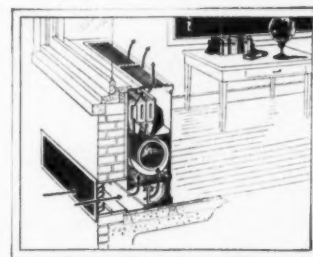
*Unit Heater-Ventilators keep classrooms comfortably heated regardless of the weather...*

Simply raising the temperature in a classroom does not make it a comfortable classroom—nor a healthy one. A red-hot stove will raise room temperature...and the absentee report, too!

Stuffiness, drafts, odors, cold corners—are common conditions in hundreds of schools during the winter months.

But Unit Heater-Ventilators give school children their full share of clean air...dust removed...warmed to a precise temperature. Sturtevant Unit Heater-Ventilators are to be found in schools...old and new...from coast to coast.

Many actual photographs of Unit Heater-Ventilators in schools, large and small—in different localities—are found in our Catalog 361. May we send you a copy? Or answer your queries on heating and ventilating subjects?



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Reg. U. S. Pat. Off.  
SUPPLIES OUTDOOR AIR ~ FILTERED CLEAN ~ AND TEMPERED

## News of the Month

one of the original settlers and a public-spirited citizen who was deeply interested in the development of education in Ipswich, made the following statement in his will:

"I give unto the free scoole of Ipswitch the little neck of land known by the name of Jeferys neck. The which is to bee and remaine to the benifitt of the said scoole of Ipswitch forever, and therefore the sayd land not to be sould nor wasted."

The income from this grant, which in the early days made the Ipswich free school the leader among grammar schools of New England, amounts to about \$5,000 a year, and is administered by the "feoffees" to the Manning High School, "direct descendant" of the old free school.

### Columbia University Constructs Fine Laboratory

Anticipated as one of the finest and best equipped laboratory buildings in the country, the new laboratory at Columbia University, N. Y., is now under construction. The building, which will cost approximately \$1,000,000, is designed primarily to house the department of natural sciences. It will be ten stories high and will be equipped with many modern laboratories. On the roof will be an experimental greenhouse for the use of the department of botany. Zoology, mineralogy, psychology and agriculture departments also will be quartered in the new building, an announcement in *School and Society* states. One floor of classrooms will separate the departments, providing room for expansion when needed.

### Herbert Hoover High School Under Construction at San Diego

The Herbert Hoover Senior High School is now under construction at San Diego, Calif., with plans for its completion by July 1, 1930.

The main plant of the new school will consist of two units and an auditorium and is planned not only as a complete educational plant but as a community center as well.

### Dialect Atlas of United States Will Be Compiled

A dialect atlas of the United States, compilation of which, it is estimated, will take ten years to complete, will be undertaken soon by the American Council of Learned Societies, it is announced in *School and Society*.

The compilation, which will include studies of the development of habits of speech in relation to the history of the settlement of the country, and the tracing of main dialectic divisions historically and geographically, is described as one of the largest undertakings that American scholarship has ever attempted.

Cooperating with the American Council of Learned So-

cieties in compiling the Atlas will be the Modern Language Association and the Linguistic Society of America. Leading American scholars of many universities will collaborate. The work will be carried on by a special staff headed by a director and under the supervision of a committee. Attention first will be directed to English dialects in the United States but eventually the survey will embrace the English language in all parts of North America.

### Parochial School to Erect New Grade Building

Ground was broken recently for the erection of a modern grade-school building for St. Matthew's parochial schools, Conshohocken, Pa. The school site occupies ground adjoining the rectory. It will be two stories high and constructed of steel and stone with facings of composition stone.

In the basement will be a large assembly room with stage and dressing rooms. On this floor there will also be men's and women's club rooms and kitchen. Four large classrooms will occupy the first and second floors.

The estimated cost of the building is \$160,000.

### Science Building Presented to University of Nevada

A new science building, to be known as the Mackay building in honor of its donor, Clarence H. Mackay, is to be erected during the summer on the site of the old physics building at the University of Nevada, Reno. The physics building has just been removed to another location. The Mackay building will be the largest on the campus.

Plans also are being completed for the extension of the bleachers at Mackay athletic field, increasing the seating capacity from 2,300 to about 5,000.

### Beautiful Campanile Planned for South Dakota State College

The new campanile of the South Dakota State College is expected to be one of the most striking structures among educational buildings of the country.

Charles Coughlin, who was graduated from the electrical engineering department of the college twenty years ago and is now a prominent business man of Milwaukee, is giving the bell tower to the college.

The campanile is 165 feet high and will be topped by an 8,000,000 candle power revolving airplane beacon that will be visible at night to aviators about 100 miles away. The thirty-seven foot stone chamber immediately below the beacon will house a set of electrically-operated chimes to call students to their classes, play concerts and sound the hours. The twenty-four foot base of stone will be flooded at night with a white light. It will contain four

# Bananas

## and Milk . . .

### an ideal food for children

TEACHERS and school cafeteria directors everywhere — confronted with the problem of proper foods to serve—are now using the easily digested, ripe banana with milk—a delicious combination that all children like.

Teachers now recognize that the school luncheon should be a vital part of the health teaching program.

Of even more importance than the mere providing of food is the fact that children can be taught in school to eat foods that are good for them.

#### High food value

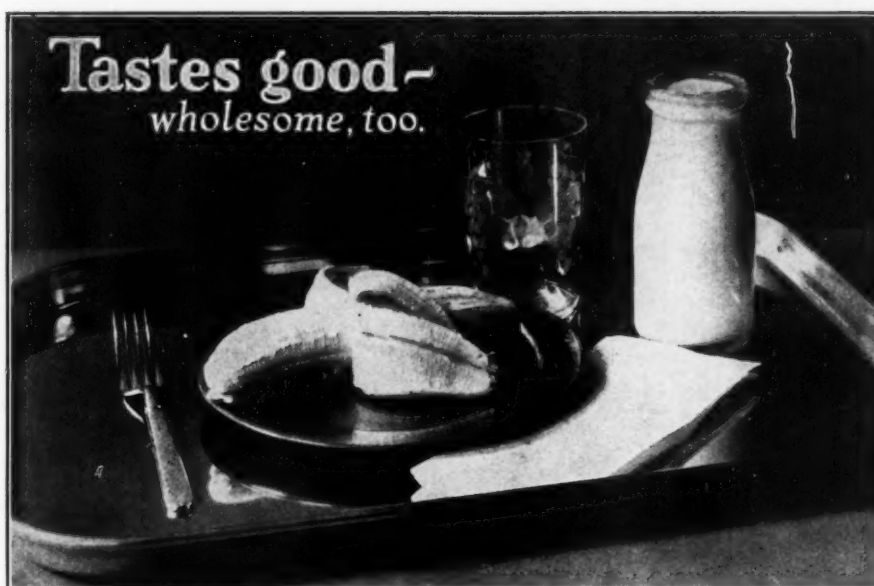
Authorities tell us that bananas and milk constitute practically a balanced diet and are a valuable source of vitamins and mineral salts—so essential to good health and proper growth.

This balanced diet is shown clearly in the following analysis from Locke's "Food Values."

CALORIE VALUES				
	Carbo- hydrate	Fat	Protein	Total Calories
Banana..... (average size)	113.7	7.3	6.4	127
Milk..... (one glass)	45.1	81.8	29.8	157
	158.8	89.1	36.2	284

The banana also supplies the important Vitamin C, which is lost in the pasteurizing of milk.

Bananas are an inexpensive food



Send for this beautifully colored wall card for display in your cafeteria or classroom. It's Free. Simply mail the coupon. The subject is effectively lithographed in eight colors. This health message carries no trademark or proprietary name.

and obtainable in abundance at all seasons.

Sealed by Nature, they are clean and sanitary. No preparation is necessary to serve bananas—just peel and eat them. When their golden yellow skin is flecked with brown, the fruit is perfectly ripe and best for flavor and nutrition—one of the most easily digested of all foods.

#### Send for this wall card

By free use of posters and pictures, children can be taught what foods are best for them. To this end we have prepared the beautiful new wall card, shown above, printed in eight colors; size 12" x 18". It is a

simple and pleasant reminder of a nutritious diet, impressing upon children the high food value of bananas and milk.

Fill in the coupon below and we will mail you this valuable school aid. FREE!

#### UNITED FRUIT COMPANY

1 Federal Street, Boston, Mass.

Please send me the Banana and Milk Wall Card.

Name \_\_\_\_\_

School \_\_\_\_\_

No. of Pupils in my Class \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

N.S. 10-29



## News of the Month

entrances inscribed with high lights in the history of South Dakota and the college.

Interspersed with the white lights illuminating the chimes chamber and balconies at the top will be lights of yellow and blue, college colors, the *Educational Buyer* states.

### New Dormitories Occupied at Cornell University

With the opening of Cornell University September 23 for its sixty-second year, several new buildings were occupied for the first time. These were the four residential halls for women, considered among the finest dormitories in the country. They will house 320 students and were built at a cost of \$1,750,000.

The dormitories are part of the \$5,000,000 building program now under way at Cornell. A group of men's dormitories is being erected on the slope west of the campus. Costing \$700,000 the four new buildings will house 150 men in addition to the 310 already accommodated in the present group. The War Memorial Towers and Cloister, now nearing completion, are a part of the men's dormitory group.

On the campus of the College of Agriculture a new plant industry building is being constructed at a cost of more than \$1,000,000, and sites are being considered for the new building for the college of home economics. Plans also are being completed for the new home of the Cornell Law School, made possible by a gift of \$1,500,000 from Myron C. Taylor of New York.

Other new construction work at Cornell includes a filtration plant and reservoir with a capacity of 1,000,000 gallons, a new laundry building and incinerator, and the new radio broadcasting station. The plants of the dairy industry and animal husbandry have been remodeled.

To correspond to the beauties of the new construction the landscape committee is improving the campus and the surrounding gorges.

### Berkeley Institute Erects School Building

A new building for Berkeley Institute, Brooklyn, N. Y., will be constructed next Spring at a cost of \$350,000, according to announcement made recently.

The new structure will adjoin the present building and will house the lower school, the kindergarten and part of the upper school. The building will be of brick and white sandstone.

### New Buildings Under Construction for Holy Angels Academy

Following the laying of the cornerstone at recent impressive ceremonies, construction work is being rushed on the new Holy Angels Academy, Buffalo, N. Y. The new

school, which will be ready for occupancy by January 1, 1930, will be one of the most completely equipped girls' schools in western New York, it is announced.

The present academy, adjoining D'Youville College, has become too small to accommodate the growing number of students and as soon as the new school is completed the old buildings will be turned over to D'Youville. Both the Holy Angels Academy and D'Youville are conducted by the Grey Nuns of the Sacred Heart.

The new building will be constructed of variegated brick and ornamental stone. The main portion of the building, containing twelve classrooms, three laboratories, study halls and locker rooms will consist of two stories and a basement. In the southern wing, which will be three stories high in addition to the basement, will be the gymnasium, cafeteria, music rooms and art studio.

A chapel and convent will be constructed later adjoining the north end of the building.

### Paducah High School Builds Gymnasium-Auditorium

Work has been started on a new gymnasium and auditorium building for the Heath High School, Paducah, Ky. The structure will be one story high, built of brick, and its construction and equipment are planned to make it one of the best of its type in the district. The gymnasium and auditorium, with a large stage, will be combined. There will be two large classrooms underneath the stage and the building will be constructed in such a way as to permit the building of additional units.

### New Gymnasium Building Planned for U. S. C.

The University of Southern California is to have a new combined men's and women's gymnasium to replace the physical education building destroyed by fire last June, according to *School and Society*.

The new building will be of Italian Romanesque design, three stories high. A roof garden will be equipped as a solarium. The first floor will include a lobby entrance leading to the administrative offices, flanked on each side by separate wings to be used by men and women. Directly beyond the lobby will be a patio which will lead to the major recreational swimming pool. This pool will be placed between the men's and women's departments and will be used jointly by them. There will also be two minor instructional pools to accommodate inexpert swimmers and learners. In the basement will be handball courts, special units for physical education majors, classrooms, special lockers and dressing rooms for faculty members. Offices for the university health service, accommodating doctors and nurses, will be situated on the second floor. Rooms and apparatus for the correction of physical abnormalities will be provided on the third floor, as well as the dance studio, the regular gymnasiums, basket-ball courts with seating facilities for spectators, athletic training quarters and boxing and wrestling rooms.

## EDUCATORS of girls

are recognizing the necessity more and more each day of rendering complete hygienic comfort to their girl students.

Ours is a service that is installed in girls' rooms whereby the latter may ease their minds and obtain physical comfort.

This service is self-maintaining—it entails no cost to you.

Deans of women, superintendents, purchasing agents and maintenance engineers are requested to write for complete particulars and details of our services.

**WRITE AT ONCE**

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*Institutional Service Dept.*

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*The Portable Floor Standard Model Equipped with 12 Green Burlap Covered Wings each 24"x36".*

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IN the Classroom, the Lecture Hall, the Workshop and Laboratory—wherever it is possible to SEE as well as hear what is being taught, the "SWING-WING" DISPLAYOR is an able assistant to the educator. America's foremost Schools and Colleges have adopted them as standard equipment!

Maps, charts, diagrams and illustrations may be thumbtacked to both sides of the Wings and visualized instantly by turning one Wing after another like the leaves of a book. Many styles and sizes are illustrated in Catalog N10, and we'll gladly tell you about our 20 DAY FREE TRIAL OFFER, too. Write to-day.

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**\$5,000 PRIZE  
ESSAY  
CONTEST**

Grigsby-Grunow Company, makers of the Majestic radio and world's largest manufacturers of complete radio receivers, are sponsoring a nationwide essay contest for teachers and educators of all classes on the subject—

### "How Can the Radio Be Used In Education?"

- 1—In College or University Education.
- 2—In Secondary Education.
- 3—In Elementary Education.
- 4—In Rural Education.

CHOOSE any one of these four divisions of the subject, and start now! Thousands of teachers are already at work—but there is still time for you to enter and win! Your idea may easily be the biggest and most progressive of all, and these rewards are well worth your effort:

Four first prizes—each a \$750 trip to Europe; four second prizes—each a \$250 trip to Alaska; four third prize \$150 trips and four fourth prize \$100 trips anywhere in the United States.

#### Here are the Judges

Mary C. C. Bradford, P. P. Claxton, Josephine Corliss Preston, J. M. Gwinn, Jessie M. Fink, Cora Wilson Stewart, Florence Hale, Dr. J. O. Engleman, Dr. Willis J. Sutton, Minnie Jean Nielson.

**Majestic  
RADIO**

MIGHTY MONARCH OF THE AIR

#### THE RULES OF THE CONTEST ARE AS FOLLOWS:

- 1 Anyone engaged in any branch of Educational Work is eligible to compete in this contest.
- 2 An individual may submit manuscript in *only one* of the four divisions of the general theme.
- 3 Papers submitted are not to exceed 5000 words in length.
- 4 All manuscripts must be in typewritten form on one side of the paper.
- 5 Be sure that your name, address and title appear in upper left hand corner of first page.
- 6 Contest opens September 1st, 1929, and closes February 15th, 1930. (No manuscript postmarked later than February 15th will be considered.)
- 7 Each contestant by submitting his manuscript waives any interest in the article submitted. Any or all of the essays submitted may be published in full or in part at a later date.
- 8 In case of a tie in any of the four divisions, duplicate prizes will be awarded.
- 9 Address all manuscripts to "Majestic Radio Essay Contest," Educational Department, Grigsby-Grunow Company, 5801 Dickens Avenue, Chicago, U. S. A.

Full details of this Majestic Prize Essay Contest are given in our *Majestic Educational Bulletin*. Send for it today—start right and win one of these big rewards. The coupon below will bring the Educational Bulletin with complete contest information. Clip—sign—mail it now!

EDUCATIONAL DEPARTMENT  
Grigsby-Grunow Company, Chicago, U. S. A.  
Gentlemen: Please send me your bulletin, containing all details of Majestic National Prize Essay Contest for Educators.  
Name .....  
Address .....  
City ..... State .....

## News of the Month

### Coming Meetings

#### Arizona State Educational Association.

President, D. M. Hibner.  
Secretary, W. T. Machan, principal, Creighton School,  
Phoenix.  
Delegate meeting, December 26-27.

#### Arkansas Education Association.

President, J. W. Ramsey, superintendent of schools, Fort  
Smith.  
Executive secretary, H. L. Lambert, 220 Glover Building,  
Little Rock.  
Annual meeting, Little Rock, November 14-16.

#### California Teachers Association.

President, J. M. Gwinn, superintendent city schools, San  
Francisco.  
Secretary, Roy W. Cloud, 508 Sheldon Building, 461 Market  
Street, San Francisco.  
No general meeting. Bay section, Oakland, December  
16-20; central section, Fresno, November 25-27; central  
coast section, Monterey, December 16-20; southern sec-  
tion, Los Angeles, December 16-20.

#### Florida Education Association.

President, J. W. Norman, University of Florida, Gaines-  
ville.  
Secretary, R. J. Longstreet, Daytona Beach.  
Annual meeting, Pensacola, November 29-30.

#### Illinois State Teachers Association.

President, George D. Wham, Carbondale.  
Secretary, Robert C. Poore, Carlinville.  
Annual meeting, Springfield, December 26-28.

#### Illinois State School Board Association.

President, W. C. Urban, Granite City.  
Secretary, A. D. McLarty, Urbana.  
Annual meeting, Peoria, October 24-25.

#### Kansas State Teachers Association.

President, L. W. Brooks, Wichita High School, Wichita.  
Secretary, F. L. Pinet, 315 West 10th Street, Topeka.  
Annual meetings, Kansas City, Topeka, Salina, Wichita,  
Dodge City and Independence, October 31, November 1-2.

#### Louisiana Teachers Association.

President, Amy H. Hinrichs, 7336 Irma Street, New Or-  
leans.  
Secretary, P. H. Griffith, Box 541, Baton Rouge.  
Annual meeting, Alexandria, November 21-23.

#### Maine Teachers Association.

President, Thomas P. Packard, superintendent of schools,  
Houlton.  
Secretary, Adelbert W. Gordon, State House, Augusta.  
Annual meeting, Portland, October 24-25.

#### Maryland State Teachers Association.

President, Charles W. Sylvester, City Department of Edu-  
cation, Administration Building, Baltimore.  
Secretary, Walter H. Davis, principal, high school, Havre  
de Grace.  
Annual meeting, Baltimore, November 29-30.

#### Minnesota Education Association.

President, George H. Sandberg, superintendent of schools,  
Rochester.  
Secretary, C. G. Schulz, 162 West College Avenue, St.  
Paul.  
No annual meeting in 1929.  
Division meetings: Mankato, Winona, St. Paul, Oct. 24-26.

#### Missouri State Teachers Association.

President, M. G. Neale, dean, school of education, Univer-  
sity of Missouri, Columbia.  
Secretary, E. M. Carter, Missouri State Teachers Associa-  
tion, Columbia.  
Annual meeting, St. Louis, November 13-16.

#### Montana Education Association.

President, Owen D. Speer, superintendent of schools,  
Deer Lodge.  
Secretary, R. J. Cunningham, Box 217, Helena.  
Annual conventions: Bozeman, Great Falls and Miles  
City.  
Delegate assembly, place not determined, December 27-28.

#### Nebraska State Teachers Association.

President, J. A. Doremus, Aurora.  
Secretary, Everett M. Hosman, 511 Richards Block, 11th  
and O Streets, Lincoln.  
Annual meeting, Omaha, Lincoln, Norfolk, Alliance, Hold-  
rege, Kearney, October 30-31 and November 1-2.

#### New Jersey State Teachers Association.

President, Raymond B. Gurley, Cleveland Junior High  
School, Newark.  
Secretary, Charles B. Dyke, Short Hills.  
Annual meeting, Atlantic City, November 9-12.

#### New Mexico Educational Association.

President, J. F. Zimmerman, Albuquerque.  
Secretary, John Milne, Albuquerque.  
Annual meeting, Albuquerque, November 1-2.

#### New York State Teachers Association.

President, G. Carl Alverson, superintendent of schools,  
Syracuse.  
Executive secretary, Harlan H. Horner, Box 20, Capitol  
Station, Albany.  
Annual meeting, Syracuse, November 25-26.

District meetings: Central district, Syracuse, October 24-25;  
eastern district, Albany, October 24-25; southeastern dis-  
trict, New York City, October 24-25; southern district,  
Binghamton, November 1-2; central western district,  
Rochester, November 1-2; western district, Buffalo, No-  
vember 8-9.

#### North Dakota Education Association.

President, Huldah L. Winsted, Minot.  
Secretary, M. E. McCurdy, 11 Magill Block, Fargo.  
Annual meeting, Minot, November.

#### Oregon State Teachers Association.

President, Julia A. Spooner, Holladay Demonstration  
School, Portland.  
Secretary-treasurer, E. F. Carleton, 301 Behnke-Walker  
Building, 11th and Salmon Streets, Portland.  
Annual meeting, Portland, December 26-28.

#### Pennsylvania State Education Association.

President, C. R. Foster, State Teachers College, Indiana.  
Secretary, J. Herbert Kelley, 400 North Third Street,  
Harrisburg.  
Annual meeting, New Castle, December 26-27.

#### Rhode Island Institute of Instruction.

President, Mrs. Pearl M. T. Remington, 212 Waterman  
Avenue, East Providence.  
Secretary, Clarence W. Bosworth, principal, Cranston  
High School, Auburn.  
Annual meeting, Providence, October 24-26.

#### Texas State Teachers Association.

President, Rush M. Caldwell, 2527 Ross Avenue, Dallas.  
Secretary, R. T. Ellis, 708 Neil P. Anderson Building,  
Fort Worth.  
Annual meeting, Dallas, November 28-30.

#### Virginia Education Association.

President, R. W. House, principal of schools, Prospect.  
Secretary, Cornelius J. Heatwole, Room 1, State Capitol,  
Richmond.  
Annual meeting, Richmond, November 27-30.

#### Washington Education Association.

President, C. Paine Shangle, superintendent of schools,  
Sedro-Woolley.  
Secretary, Arthur L. Marsh, 707 Lowman Building,  
Seattle.  
Annual meeting, Seattle, October 24-25.  
Representative assembly, October 26.

#### West Virginia State Education Association.

President, J. F. Marsh, state department of education,  
Charleston.  
Secretary, J. H. Hickman, rooms 403-405, Capital City  
Bank Building, Charleston.  
Annual meeting, Huntington, October 31, November 1-2.

#### Wisconsin Teachers Association.

President, Merle C. Palmer, Columbus.  
Secretary, B. E. McCormick, 716 Beaver Building, Madison.  
Annual meeting, Milwaukee, November 7-9.



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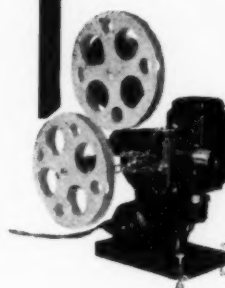
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## In the Educational Field

HUGH H. LANSING, formerly superintendent of schools, Watervliet, N. Y., has been appointed to a grammar-school principalship at Troy, N. Y.

MRS. MARY MCQUADE, Carlyle, Ill., has been appointed superintendent of schools at Carlyle, Ill. She will serve through the unexpired term of the late IRL J. JOHNSTON.

LINSCOTT BALLENTINE, assistant state supervisor of Virginia trade and industrial education, in charge of foremanship and industrial teacher training, resigned recently to go into business. He is succeeded by C. J. HYSLUP, assistant principal of the Blair Junior High School, Norfolk, Va.

L. X. JOHNSTON, former superintendent of public schools, Smithfield, Ohio, has become assistant superintendent of schools for Columbiana County, Ohio.

S. M. STOFFER has been elected superintendent of schools, Wilmington, Del., succeeding DR. DAVID A. WARD, now superintendent of the Chester, Pa., schools. MR. STOFFER resigned as superintendent of schools at Pottstown, Pa., to accept the Wilmington position. Prior to his service at Pottstown he was superintendent of the schools of Hanover, Pa.

HARVEY D. TEAL, formerly superintendent of schools, Stark County, Ohio, is now superintendent of the Clairton, Pa., schools.

WAYNE C. LUTZ, formerly at Pomeroy, Ohio, has been chosen superintendent of the Gallipolis, Ohio, schools for this year. He succeeds K. R. VERMILLION, who has accepted an executive position with the Cleveland school system.

GLENN D. SMITH, formerly principal of the high school, Riverton, Kan., is now superintendent of schools at Scammon, Kan. He is succeeded at Riverton by GEORGE CALLIS.

D. F. KLEMM, formerly principal of the junior high and grade schools, Belleville, Kan., has been elected superintendent of schools at Colby, Kan.

BLAINE NOLAN, superintendent of the Roseland-Carona schools, Kan., for several years, has become superintendent of the West Mineral, Kan., schools. ROBERT TRUMBO now heads the Roseland-Carona schools.

M. J. CLARK, superintendent of schools, Union City, Tenn., has resigned to register for graduate work at the University of California.

I. E. STUTSMAN, superintendent of high schools, Logan County, Colo., has been elected superintendent of schools at Greeley, Colo.

FULLER AUSTIN, superintendent of schools, Wahoo, Neb., has resigned to become school deputy under State Superintendent Taylor.

JOHN T. KAEMMERLEN has been elected superintendent of schools at Catskill, N. Y.

E. B. BROWN has been chosen as superintendent of schools at Hominy, Okla.

HARLEY E. TALLEY, superintendent of schools, Bartholomew County, Indiana, has been appointed director of statistics, educational reference and research by the state board of education.

JOHN A. LINEBARGER, superintendent of public schools, Rockville, Ind., for the past twenty-three years, has resigned to go into business.

D. W. PETERS, formerly superintendent of schools, Henrico County, Va., has become state supervisor of secondary education in the Richmond, Va., department of education. He succeeds HENRY C. GROSECLOSE, who has returned to the Virginia Polytechnic Institute to continue his duties as associate professor of agricultural education. MR. PETERS is succeeded by J. MILTON SHUE, former superintendent of schools of Accomac County.

H. L. SULFRIDGE, for the past ten years superintendent of schools, Big Stone Gap, Va., has been elected principal of the Lane High School, Charlottesville, Va.

A. C. COOPER, who resigned as superintendent of schools, Henrico County, Va., last Fall to study at the University of Virginia, has accepted the principalship of the Crozet High School, Albemarle County, Va.

N. D. MORGAN, superintendent of schools, Gillette, Wyo., has been appointed commissioner of education for Wyoming.

WILLIAM C. COOK has been appointed state director of vocational agriculture for West Virginia, succeeding J. FRANK MARSH, now president of the Concord State Normal School.

JOSEPH M. FROST, who formerly held school superintendencies in Illinois and Michigan, died recently at the age of seventy-one years. MR. FROST was a past president of the Michigan State Teachers' Association.

ARTHUR S. THOMAS, who recently became superintendent of schools for Miami County, Ind., has been appointed a member of the Indiana State Board of Education.

VIRGIL WHITAKER has been elected superintendent of schools for Morgan County, Ind., to succeed I. M. KONTWORTHY, who resigned to become assistant auditor of the state relief fund, state department of public instruction.

MABEL C. STANLEY and WILLIAM F. VOGEL of the Indiana public school system were married August 6. MISS STANLEY has been connected with the department of public instruction the past seven years and MR. VOGEL is superintendent of schools at Shelbyville.

LYMAN R. ALLEN, Framingham, Mass., has been elected superintendent of schools for the four towns of Westwood, Medfield, Millis and Norfolk, Mass., filling the vacancy caused by the resignation of A. HOWARD WILLIAMSON, superintendent for the past two years. Prior to accepting the new position MR. ALLEN served as superintendent of Union No. 2, one of the oldest school unions of Massachusetts, comprising the towns of Templeton, Philipston, Hubbardston and Royalston.

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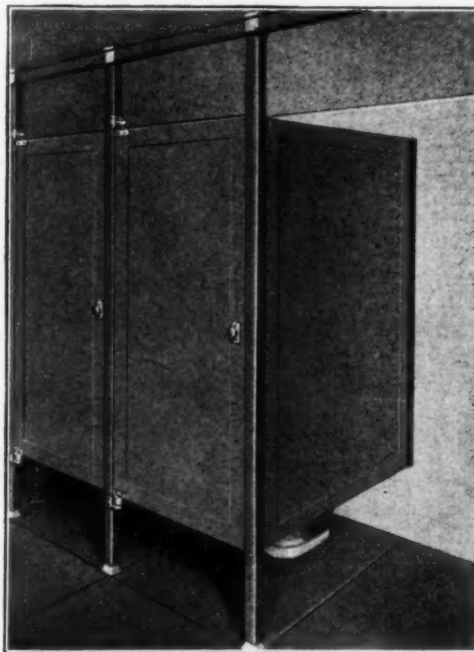
as often as required to maintain it forever new. We knew that it would be the most sanitary partition ever developed.

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the meantime a number of the fine buildings now being built have either placed orders or have written Marblmetal in their specifications.

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## In the Educational Field

J. L. LAWING has been chosen superintendent of public schools, Maryville, Kan., succeeding L. E. ZIEGLER.

WALLACE C. BOYDEN, principal, Boston Teachers' College, since 1900, has been retired from active duty at the age of seventy. MR. BOYDEN first entered service in the Boston educational system in 1889, serving as master of the Boston Normal School, the name of which later was changed to Boston Teachers' College.

J. J. MADDOX, former superintendent of instruction, St. Louis Board of Education, has become principal of the Woodward School, St. Louis. HENRY J. GERLING succeeds him in the superintendency, a post he held for eight years.

LEON E. PRIOR, for several years superintendent of schools in the union district of West Stockbridge, Richmond, Egremont and Alford, Mass., has become superintendent of the Baldwinsville district, Mass.

CARL F. HOLLORAN, Newtonville, Mass., has been appointed superintendent of schools at Lincoln, Mass. MR. HOLLORAN, who will combine the duties of superintendent of schools and principal of the Center School, succeeds HAROLD O. FRENCH, principal of the grammar school at Bristol, Conn., who took a leave of absence to fill, temporarily, the vacancy caused by the resignation of CHARLES M. ROBINSON as Lincoln superintendent. MR. ROBINSON is now principal of the Hingham Junior High School.

A. V. NOLAN, Old Fort, N. C., has been chosen superintendent of the McDowell County Schools, N. C., succeeding N. F. STEPPE, who resigned to enter business.

B. I. SATTERFIELD, former superintendent of schools, Person County, N. C., has resigned to practice law. He is succeeded by S. G. WINSTEAD.

OWEN D. WIGGANS has been chosen as superintendent of schools at Galesburg, Kan.

EVERETT STROUD is the new superintendent of schools at Mt. Hope, Kan.

WALTER V. READ, formerly principal at Granville, Ohio, is now superintendent of schools at Johnstown, Ohio.

WILLIAM E. MELVIN, formerly of the Lordstown Township schools, Trumbull County, Ohio, has been chosen head of the Brown County Schools, Ohio.

J. E. MCLEAN, formerly of Spring Hope, N. C., is now head of the Rockingham County schools, N. C., succeeding J. H. ALLEN, who has entered the business field. MR. MCLEAN is succeeded by PAUL C. NEWTON at Spring Hope.

J. G. COLLICOTT, superintendent of schools at Columbus, Ohio, for the past ten years, has been reelected for another five-year term.

T. E. DAVIS, formerly superintendent of schools at Kincaid, Kan., is now superintendent at Mound City, Kan. He is succeeded at Kincaid by FRENCH BOOHER.

R. A. EDSON, superintendent of schools, Carneiro, Kan., has resigned and is succeeded by RUDOLPH BARTA, formerly of Lorraine.

N. E. WRIGHT, former superintendent of schools, Swain County, N. C., has been chosen superintendent of schools at Aberdeen, N. C. E. W. S. COBB, former superintendent in Polk County, has been chosen for the Swain County vacancy and is succeeded in Polk County by T. S. WHITE.

W. J. B. STRANGE has resigned the superintendency of schools at Mound City, Kan., to become superintendent of the schools at Pleasanton, Kan.

C. A. YOEMANS, superintendent of schools at Lyons, Kan., for several years, has become principal of the Chase County Community High School at Cottonwood Falls, Kan., succeeding WILLIAM R. THOMPSON, who resigned to enter business.

D. C. RUCKER of Tipton, Mo., has been elected superintendent of schools at Eldon, Mo.

G. E. DENMAN, Park Falls, Wis., heads the school system at Edgerton, Wis., this year.

W. H. PHINNEY, former superintendent of schools, Calais, Me., has been chosen head of the schools at Fairfield, Md. FRED ENGLISH fills the vacancy at Calais.

EMILY HOWLAND, of Sherwood, N. Y., long a prominent figure in New York educational circles, died recently at the age of 101 years. She was taken from school at the age of sixteen because it was not considered best that a girl have "too much education," but later returned to classes and spent most of her life teaching or as a school executive.

N. G. SHEFFER, principal of the senior high school, Belleville, Kan., resigned recently to become superintendent of schools at Mankato, Kan.

W. R. ANTHONY has been elected superintendent of schools at Muscotah, Kan., succeeding CECIL P. GRAY.

BERNARD C. GREENE has been elected to the superintendency at Mound Valley, Kan.

EDWARD B. SELLEW, superintendent of schools, Middletown, Conn., for twelve years, died recently. For ten years he was New England editor of the *Springfield Republican*.

DR. R. E. TIDWELL, state superintendent of education, Alabama, since 1927, resigned recently to accept a position on the faculty of the Teachers College of Columbia University, New York. He will be succeeded by DR. A. F. HARMON, director of field survey work, Alabama State Department of Education.

EARLE FISCHER has been elected superintendent of schools, Mineral Springs, Ark.

B. C. PATTERSON has become superintendent of schools at Wareham, Mass. He succeeds MRS. ELSIE THOMAS, who resigned recently to accept a position in Milton, Mass.

DR. FRANCIS H. J. PAUL, principal, DeWitt Clinton High School, New York, died September 8. Prior to becoming principal of the DeWitt Clinton High School he was principal of the New York Evening High School and was active in many educational organizations.



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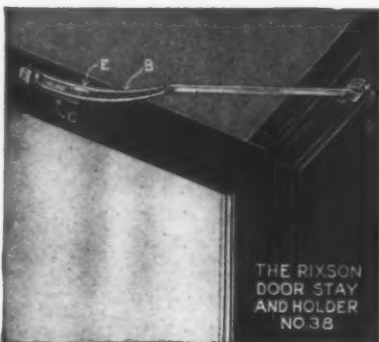
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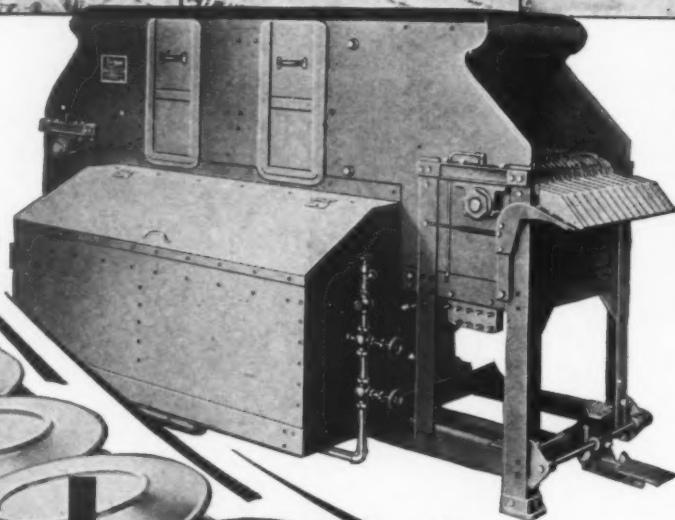
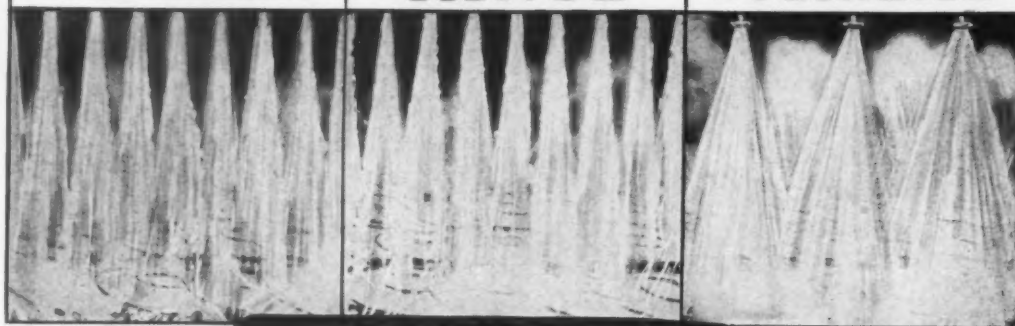
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**T**ENS, hundreds, thousands—yes millions of soiled dishes in a never-ending parade come to Colt Autosan Dishwashing Machines in the kitchens of the leading hotels and restaurants throughout the country.

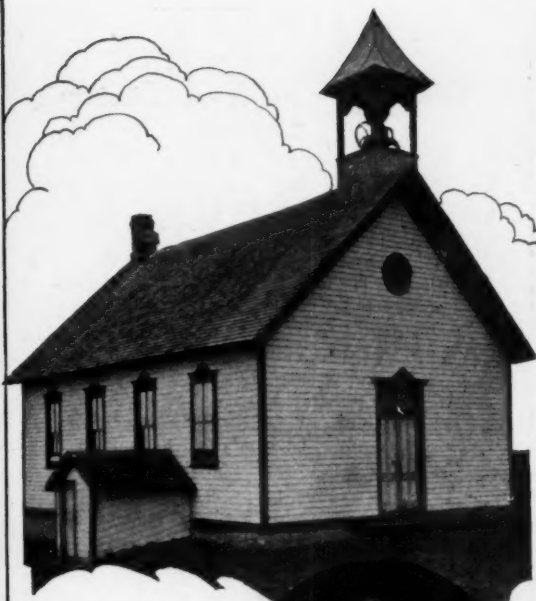
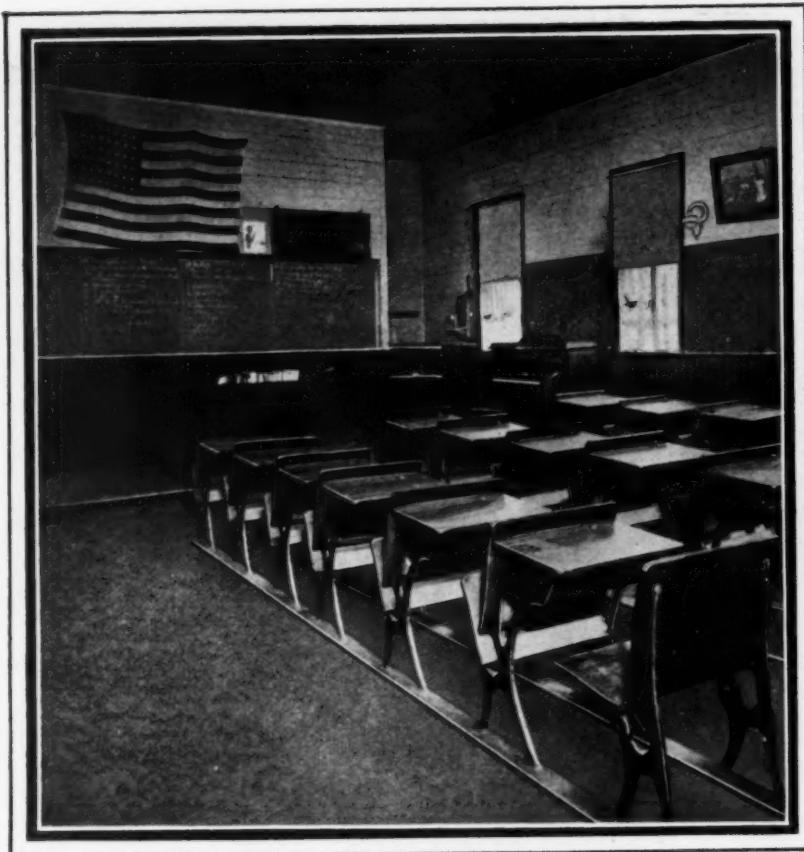
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*This bright, easily-cleaned Armstrong Floor was installed by Barnard's Furniture Store, Fergus Falls, Minn.*



*Miss Elizabeth Brown enlisted the aid of her school children to bring modern equipment into her "Little Red Schoolhouse."*

## There's quiet in this one-room school today

MISS Elizabeth Brown reminds us. Here we've been thinking of modern school equipment in terms of large buildings and million-dollar equipment. And then, suddenly, we are made to realize that the "Little Red Schoolhouse" still has a lesson for us all.

A friend told us about Miss Brown and her District School No. 9, in St. Olaf Township, Otter Tail County, Minnesota. One day this schoolmistress held up her hand for attention. Classes had just changed. Feet were still scuffing and scraping noisily. Dust still rose from well-swept but ugly floor cracks. Pupils wondered why "teacher" gazed so long at that worn-out, splintery floor.

Then Miss Brown told them about modern floors for schools. Their young imaginations grasped the attractiveness, cleanliness, and friendliness of the new linoleum. Never mind waiting for an appro-

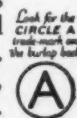
*It came after teacher and pupils decided to get rid of their noisy, old floor*

priation! We'll earn the money for the new floor with school entertainments! And they did!

Now there's an Armstrong's Linoleum Floor in District School No. 9. And Miss Brown says: "There isn't half the disturbance in the schoolroom this term. You know, the minute a child gets uneasy he shuffles his feet. With an old-fashioned floor this constant

disturbance would sometimes upset the whole room. Now there is none of that, and when classes come forward to recite, it is so quiet one would almost think the children were wearing rubbers. Then, the floor is so easy to sweep and sanitary—not a crack in the whole room to dig out or for moisture to get in. We like it very much."

And so do scores of principals, headmasters, and deans. That's why we realize that the "Little Red Schoolhouse" must meet the same floor problems that confront the largest schools and colleges. That's why, whether your school is large or small, we'd like to send you "Enduring Floors of Good Taste." This color-illustrated book tells you all the floor facts about Armstrong's Linoleum and its new Accolac-Process surface. It also describes how completely our School Service Bureau can help you. Armstrong Cork Company, Floor Division, Lancaster, Pa.



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With Klein's All Wool, Individually Tailored WATERPROOFED

## UNIFORMS

75TH ANNIVERSARY SPECIAL

Made under our own supervision in our own Daylight Factory.



Coat, Trousers &

Cap ..... \$16.75

Cape & Cap ..... 7.00

Blouse & Cap ..... 7.25

Trousers only ..... 5.50

Of splendid quality, fast color fabrics, with interchangeable capes. In any color combination desired. Monograms at a slight additional cost.

Every yard of material Waterproofed by the famous "Anti-Pluie" Process.

Send for Samples, Prices and Measurement Blanks.

**D. Klein & Bro., Inc.**

Makers of good uniforms for 75 years

715-719 Arch St. PHILADELPHIA, PA.



THEY look so tempting that children invariably select these Gumpert's Gelatine Desserts. And they are as good as they look. Nutritious, easily and quickly prepared, easy to digest—the perfect dessert for schools. Try them.

Gumpert's Gelatine Dessert

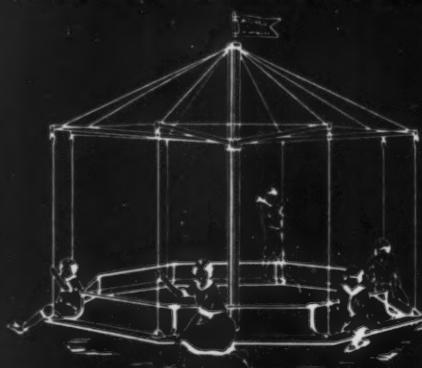


A Product of S. Gumpert Co., Inc. Brooklyn, N. Y.

# MITCHELL

BETTERBILT  
Playground Apparatus

Schools—Homes—Parks



Mitchell Whirl

The Mitchell Whirl, shown above, is just one number in the "Betterbilt" line. Send for free illustrated catalog and name of your state distributor.

**MITCHELL MFG. CO.**

1808 Forest Home Ave.

Milwaukee, Wis.

## STILL PROJECTION HAS ITS ADVANTAGES

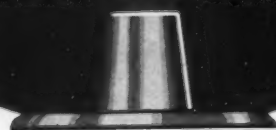
The instructor, for example, may proceed at a speed which best suits the subject which he is discussing. He may dwell on any particular illustration as long as he sees fit.

And subject material is easy to obtain for the Bausch & Lomb LRM Combined Balopticon. Slides may be obtained at a small cost, photographs, pages of a book, postcards or the specimen itself will do.

If a film attachment is used, even film, which is available on many subjects, can be used.

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**BAUSCH & LOMB**  
OPTICAL COMPANY



716 ST. PAUL ST.

ROCHESTER, N. Y.

# Homelike Student-Room Equipment

## WITHIN YOUR BUDGET



THE STUDENT can be happy and comfortable in a cheery room like this! Teachers, too, enjoy this practical, good looking furniture in their own homes. Simmons Bed No. 1772, Dresser No. 22064, Chair No. 105, Desk No. 22164 and Windsor Chair No. 22180

**Y**OU can provide attractive, comfortable sleeping rooms for students, at a cost within your budget! The homelike surroundings essential to the welfare of the student are obtained economically, when you install Simmons Metal Furniture.

### *Practically indestructible*

Constructed entirely of enduring steel, and finished by a special process, Simmons Furniture gives a lifetime of perfect service.

Surfaces will not chip or become marred. Marks that destroy ordinary surfaces can be easily removed from the Simmons product with a damp cloth. The sturdy steel construction does away with the warping, splitting and twisting that make other kinds of furniture wear out quickly. Simple cleaning is all the attention

Simmons Furniture needs to keep it fresh and new looking. Drawers have special sliding construction. They always slide smoothly, close snugly, and operate *without noise*. Vermin proof. Fire-proof. Easily sanitized.

While the Simmons purchase price may be a little more, you will not have to spend money for the upkeep of this furniture, because it never breaks down. Simmons proves most economical in the end!

Among the numerous Simmons styles in gay colors and in excellent reproductions of good woods, there is the style to fit *your* needs . . . to fit your budget. Send for a catalog! The Simmons Company, Contract Division, 666 Lake Shore Drive, Chicago, Illinois.

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# SIMMONS

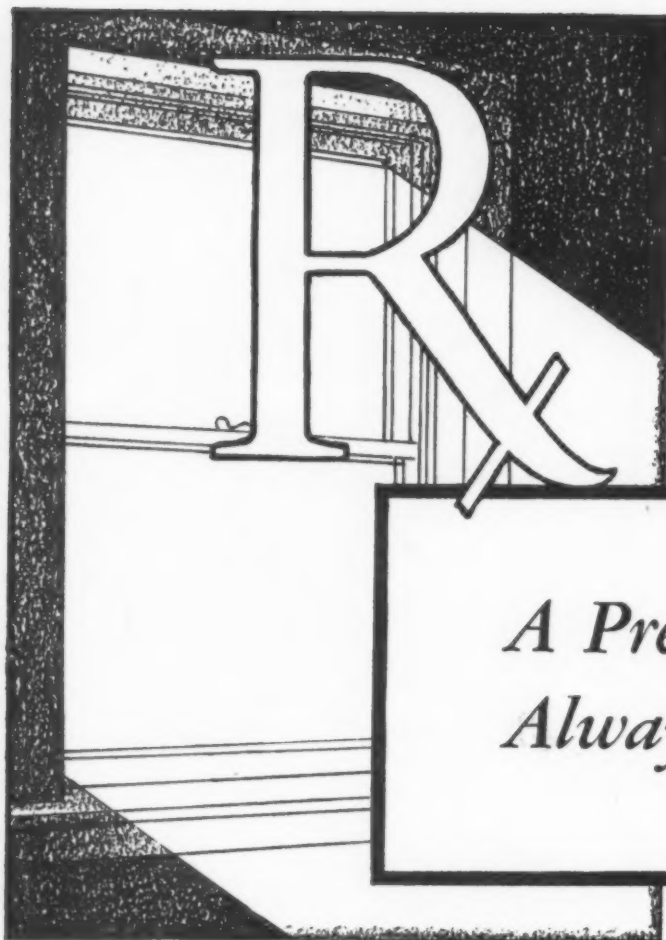
*World's largest makers of*

BEDS • SPRINGS • MATTRESSES • METAL FURNITURE



BUILT  
FOR  
SLEEP





*A Prescription That Will  
Always Be Correctly Filled*

"Plenty of pure sunlight" is the modern prescription for keeping school-children healthy and happy in the classroom. No chance for inferior ingredients and improper compounding when the prescription is filled by using Helioglass! For extensive tests have proved that Helioglass at all times permits the passage of a major portion of the sun's vital ultra-violet rays,

whereas ordinary window glass, no matter how clear, sifts them out.

And now that the cost of Helioglass has been reduced, it is being even more widely recommended and used for school windows. You will be genuinely interested in knowing how inexpensive the cost of a Helioglass installation will be. Write for information.

PITTSBURGH PLATE GLASS CO., PITTSBURGH, PA.

Warehouses in All Principal Cities of the United States



# HELIOGLASS

*An Ultra-Violet Ray Glass*



# 3 Reasons Why



Administration Building, Goucher College, Baltimore, Md.

## Goucher College paints with Barreled Sunlight

**F**OR good looks . . . for ample light . . . for dirt-resistance and ready washability . . . Goucher College, like many other modern schools, paints with Barreled Sunlight.

In Goucher's Administration Building, Gymnasium, and all Dormitories, interior surfaces, painted with Barreled Sunlight, have a rich depth, a satin-smooth texture. And this flawlessly smooth finish, so pleasing to the eye, serves a highly practical purpose—it stubbornly resists dirt, for it has no pores in which dirt can become embedded. Furthermore, it may be

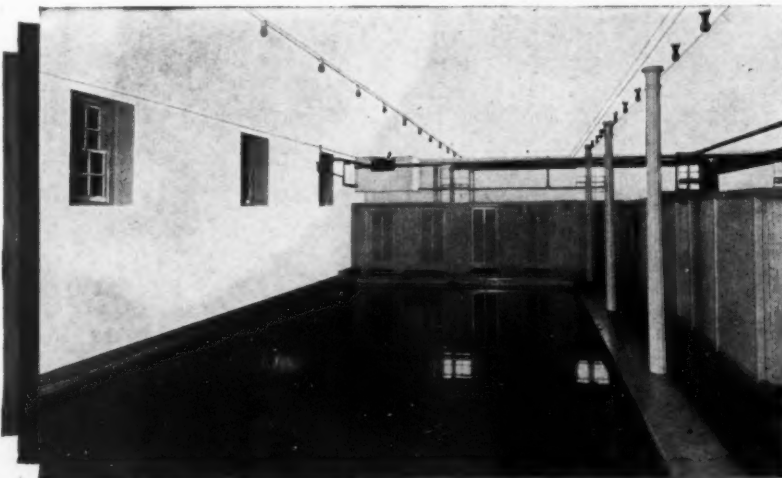
washed, like tile, without wearing away.

Interiors painted with Barreled Sunlight are assured ample light, *free from glare*.

Barreled Sunlight is guaranteed to remain white longest.

In Full Gloss, Semi-Gloss and Flat. Drums and cans. Easy to tint. For priming, use Barreled Sunlight Undercoat. Note coupon below.

U. S. Gutta Percha Paint Co., 47-J Dudley Street, Providence, R. I. Branches: New York—Chicago—San Francisco. Distributors in all principal cities.



Swimming Pool, Goucher College. Splendid example of the clean, bright, cheerful interiors made possible by the use of Barreled Sunlight

### Barreled Sunlight is easily tinted

Any desired shade may be obtained by mixing ordinary colors in oil with Barreled Sunlight white — or by using the handy tubes of Barreled Sunlight Tinting Colors, now available in two sizes. Quantities of five gallons or over tinted to order at the factory without extra charge.



U. S. GUTTA PERCHA PAINT CO.  
47-J Dudley Street, Providence, R. I.

Please send us your descriptive booklet and a panel painted with Barreled Sunlight. We are interested in the finish checked here.

Gloss ( )      Semi-Gloss ( )      Flat ( )

Name . . . . .

Street . . . . .

City . . . . . State . . . . .

# McCRA Y

## Symbol of Refrigerator Service *for 39 Years*

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THE McCray nameplate on refrigerators has the same significance as the sterling mark on silver. It means quality that goes through to every hidden detail of construction. And it is an assurance of service which accompanies only the highest type of manufacture.

For 39 years McCray has been manufacturing refrigerators. Building to the same high standards. Holding to an unswerving ideal, never compromising in the slightest detail of material or craftsmanship.

The result is a priceless reputation for McCray. In thousands of institutions throughout the country McCray refrigerators are delivering efficient and economical service. Day-in and day-

out they are performing their task so thoroughly and so dependably that the satisfaction of McCray users has become proverbial.

This outstanding service of McCray is strikingly demonstrated with any machine refrigeration or ice. And because efficient, economical service with any type machine, as well as with ice, depends finally upon the refrigerator itself, McCray is almost invariably selected when assurance of dependable service is demanded.

There are McCray models to suit every need, and for every commercial purpose. Send now for catalog and information about refrigerators for your particular needs.

### McCRAY REFRIGERATORS FOR ALL PURPOSES

For

Grocery Stores.  
Meat Markets.  
Hotels · Restaurants · Hospitals.  
Institutions.  
Florist Shops.  
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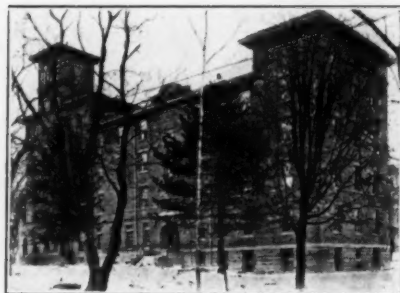
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Salesrooms in All Principal Cities (See Telephone Directory)

WORLD'S LARGEST MANUFACTURER OF REFRIGERATORS FOR ALL PURPOSES

# McCRAY REFRIGERATORS



## They found the logical solution to a major construction problem

STEELTEX for Floors comes in rolls and is attached to the beams in continuous strips from one side of the building to the other. Fits any type of wood or metal beam or truss. The picture shows the Everett Junior High School, Lincoln, Nebraska, Davis and Wilson, architects—a recent installation.

Agnes Howard Hall, Wesleyan College, Buckhannon, W. Va., Carl Reger, Morgantown, W. Va., architect. STEELTEX for Floors, used in this girls' dormitory, acts as combined reinforcing and concrete form and saves time, labor, material, and money.

The backing of STEELTEX for Floors is of ample strength not only to support concrete while being poured, but also to afford safe walking surface once the fabric has been attached to the beams. Coraopolis High School, Coraopolis, Pa.

### Why experienced builders are increasingly using **STEELTEX** for floors

STEELTEX for Floors offers the logical method for all light steel beam construction. A STEELTEX-for-Floors job is a strong, clean job at low cost, whether you are building concrete floors for apartments, hotels, hospitals, schools, churches, theatres, or office buildings.


Today's leading architects, engineers, and contractors are turning increasingly to STEELTEX for Floors because of its

economy, strength, speed, adaptability, and eminently satisfactory finished results.

The photographs on this page of a few typical STEELTEX jobs among many hundreds of installations tell the story, but we would like to send you complete information. Please write us for it.

National Steel Fabric Company

DIVISION OF  
**Pittsburgh Steel Co.**

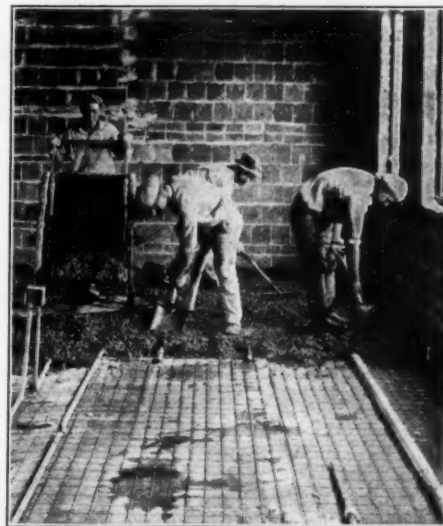
3910 Union Trust Bldg.  Pittsburgh, Pa.



the New Ribbed  
**STEELTEX**  
FOR FLOORS AND ROOFS

#### 10 advantages of **Steeltex** for floors

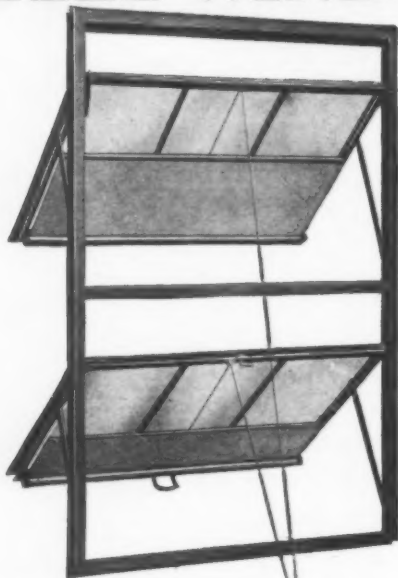
1. Eliminates wood or metal forms.
2. Steel properly embedded automatically—full strength developed as true reinforcing.
3. Time and labor saved—quickly cut from roll and easily attached, to any type of beam.
4. Saves concrete. Minimizes droppings.
5. Water-cement ratio maintained—assuring full strength of concrete.
6. Proper curing assured.
7. Eliminates clean-up expense.
8. Sound deadening factor especially desirable in hotels, schools, hospitals and apartments.
9. Permanence of reinforcing guaranteed by heavily galvanized mesh.
10. Temperature stresses resisted and reinforcing correctly spaced, without necessity of inspection or special handling to cover these points.



Watertight form, correct reinforcing. The method of attaching mesh to the backing insures automatic embedment of the reinforcing wires without any labor for blocking up, or for pouring the slab in two operations.



# TRUSCON DONOVAN AWNING TYPE STEEL WINDOWS



When fully drawn the individual shades on each sash act as awnings.

## For Daylighting and Ventilation of SCHOOLS, OFFICES EDUCATIONAL AND INSTITUTIONAL BUILDINGS

Movement of lower sash operates upper sash—no window poles required. Sunlight is reflected from shades on open windows and is diffused—no awnings required. Truscon Donovan Awning Type Windows are of high quality throughout, but due to large production are moderately priced.

Full information, quotations and literature on request.

### TRUSCON STEEL COMPANY, YOUNGSTOWN, O.

#### Steel Window Division

Truscon Steel Company of Canada, Limited, Walkerville, Ont.  
Warehouse and Office in Principal Cities

Represented on the Pacific Coast by

The Universal Window Company, 1916 Broadway, Oakland, Calif.



Upper two sash open — bottom sash closed.



Upper sash open — lower sash closed.



Upper sash closed — lower sash open.



Bottom sash open — upper sash closed.



## Cleans shower bath floors and leaves them safe

**B**ODY grease and insoluble soap deposits on shower bath floors are a serious menace to sanitation and safety. And often they require an excessive amount of time and effort to remove.

The solution to this problem was found in one large institution by calling in the nearest Oakite Service Man.

The floor was wet down, sprinkled with a small quantity of TRAZITE ... the new Oakite floor cleaning material ... scrubbed lightly, and rinsed. Results were perfect. The slippery deposit was entirely removed ... the tile left snow-white and glistening. And, in addition to working so thoroughly, TRAZITE did the job "easier than any cleaning compound ever used on this floor."

Let our nearby Service Man work with you on your cleaning problems. You incur no obligation by writing us and asking to have him call.

Manufactured only by

OAKITE PRODUCTS, INC., 28D Thames Street, NEW YORK, N. Y.

Oakite Service Men, cleaning specialists, are located at

Albany, N. Y.; Allentown, Pa.; \*Atlanta, Ala.; \*Baltimore, Md.; Battle Creek, Mich.; \*Boston, Bridgeport, \*Brooklyn, N. Y.; Buffalo, \*Camden, N. J.; Charlotte, N. C.; Chattanooga, Tenn.; \*Chicago, \*Cincinnati, \*Cleveland, \*Columbus, O.; \*Dallas, \*Davenport, \*Dayton, O.; Decatur, Ill.; \*Denver, \*Des Moines, \*Detroit, Erie, Pa.; Fall River, Mass.; Flint, Mich.; Fresno, Cal.; \*Grand Rapids, Mich.; Harrisburg, Pa.; Hartford, \*Houston, Texas; \*Indianapolis, \*Jacksonville, Fla.; \*Kansas City, Mo.; \*Los Angeles, Louisville, Ky.; Madison, Wis.; \*Memphis, Tenn.; \*Milwaukee, \*Minneapolis, \*Moline, Ill.; \*Montreal, Newark, N. J.; Newburgh, N. Y.; New Haven, \*New York, \*Oakland, Cal.; \*Oklahoma City, Okla.; \*Omaha, Neb.; Oshkosh, Wis.; \*Philadelphia, Phoenix, Ariz.; \*Pittsburgh, Pleasantville, N. Y.; Portland, Me.; \*Portland, Ore.; Poughkeepsie, N. Y.; Providence, Reading, Pa.; Richmond, Va.; \*Rochester, N. Y.; Rockford, Ill.; \*Rock Island, Sacramento, Cal.; \*San Francisco, \*Seattle, South Bend, Ind.; Springfield, Mass.; \*St. Louis, \*St. Paul, Syracuse, N. Y.; \*Toledo, \*Toronto, Trenton, \*Tulsa, Okla.; Utica, N. Y.; \*Vancouver, B. C.; Wichita, Kans.; Williamsport, Pa.; Worcester, Mass.

\*Stocks of Oakite materials are carried in these cities.

# OAKITE

TRADE MARK REG. U.S. PAT. OFF.

## Industrial Cleaning Materials and Methods

# Troubles

a plenty when a laboratory drain line corrodes.

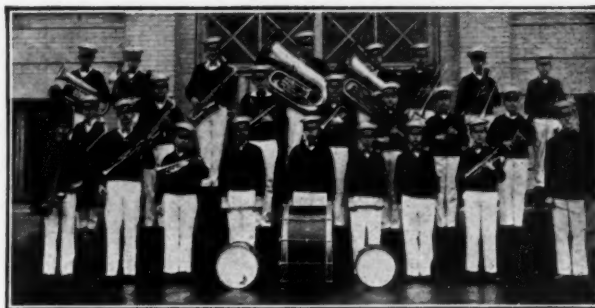
Damage to structure and finish, insanitary conditions and expensive repairs, all may be caused by a leaky acid line.

The proper insurance against such trouble is acid-proof Duriron drain pipe, which is no more attacked by corrosive wastes than other pipe is by pure water.

Complete catalogue in "Sweet's"  
A preprint on request.

**The Duriron Company,  
Dayton, Ohio**

**DURIRON**  
FOR ACID SERVICE



Magnolia High School Band, New Martinsville, W. Va.  
H. B. Leighty, Director

## Why Not Have a School Band?

*It's Easy to Start One with Our Help*

There is nothing like a School Band to foster the school spirit, and to provide a sane outlet for youthful enthusiasms. Instructors find the organization of such a friendly group a real aid in promoting school discipline and directly beneficial in bettering grades.

### Band or Orchestra Easily Started

In your school you have many students with some musical foundation—also others who would learn to play some instrument easily. You have many parents who would welcome such a movement and who would gladly provide their children with the necessary instruments. With our help both instruments and instructors are easily secured.

You need not be a teacher of music to start this movement in your school. No knowledge of music on your part required. If you would like to see a band or orchestra started in your school, write us today.

### Our Services Offered Free

Buescher Instruments are played by America's leading orchestras and bands. We offer any superintendent the benefit of our many years of experience in helping organize musical groups in schools. It is only necessary for someone to take the initiative. Why not do this for your school?

With our help you will be surprised to find how easily it may be done. The first step is to write us for information blank, which when filled out and returned will tell us the number and kinds of instruments already available in your school, the number of pupils that may be interested. We can then advise whether band, orchestra or smaller group should be organized and what instruments will complete the most effective organization.

Write us today—without obligation. Catalogs and information will be mailed promptly.

### BUESCHER BAND INSTRUMENT CO.

2820 Buescher Block - - - - - Elkhart, Indiana  
Manufacturers of the famous Buescher "True-Tone" Instruments

Buescher Band Instrument Co., 2820 Buescher Block, Elkhart, Ind.  
Gentlemen: I am interested in securing your catalog and information about starting a school band. (586)

Name.....

Address.....

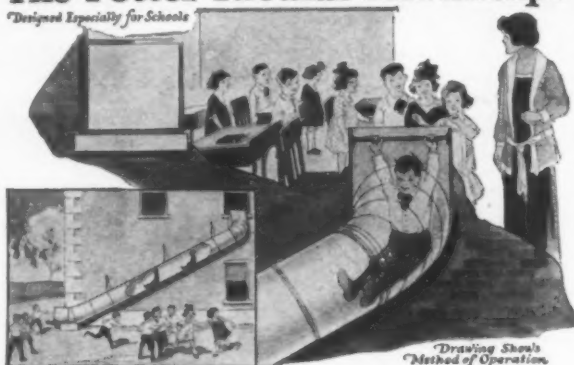
# JUST PLAY

CHILDREN NEVER PANIC IN PLAY

With a POTTER they never know there is a fire until they are out of the building

## The "Potter Tubular Fire Escape"

*Designed Especially for Schools*



*Drawing Shows Method of Operation*

Four Schools in Nebraska alone had fires. The pupils escaped safely through Potter Tubular Slides.

Hundreds in use in 42 states, some for the past 15 years. The only fire escape (with service records) approved by the Underwriters' Laboratories.

In case of a school fire why send children to the center hallways or crowded outside stairs where panic causes more deaths than even fire, when they would be safe from either by coasting away from fire and smoke down a

### Potter Tubular Slide

*Interesting book on request*

POTTER MANUFACTURING CORP.  
1861 Conway Bldg. CHICAGO

## "INTER-TWILL" Window Shades for SCHOOLS

*Fulfill all requirements*

Specify—"INTER-TWILL" because . . . there are more years of service in these window shades. It is a TWILL woven fabric of exceptional strength. "Inter-twill" shades are washable.

If total exclusion of light is desired, specify Interstate "NOLITE" Shade Cloth. Shadowless and light-proof in all colors including light colors and white.

*Made in the color tone of your choosing*

### Interstate Shade Cloth Co.

HOBOKEN

NEW JERSEY

and

The Lapsley-Interstate Shade Cloth Co.,

Baltimore

Maryland

## It's The Extraordinary That Counts! The Alternator Is Extraordinary

The ordinary equipment for the school room is the old fashioned blackboard. The new way places an Alternator in the front center of the room just beside the teacher's desk. And on each side of the Alternator, cork carpets should be used for display and poster work.

This is the ideal arrangement of the blackboard equipment of the modern schoolroom.

The Alternator saves children's eyes. It makes the teacher's work more interesting . . . and easier. She can save work from day to day . . . and flash material on her classes. Send for prices and the Catalog No. A-4 which explains the Teacher's Swinging Blackboard Book in full.

### K-M SUPPLY COMPANY

123 West 8th St.

Kansas City, Mo.





John Hay  
High School  
Cleveland  
Ohio



Literature and specifications covering Kayline Units for schools will be sent on request. Samples may be had for test purposes and our engineering department will gladly render service. Without obligation, of course.

### Efficient Illumination An Important Factor

**A** GAIN, Kayline Units play an important role in dispelling gloom and adding charm to the interior of one of Cleveland's largest and most recently constructed public schools—John Hay High School.

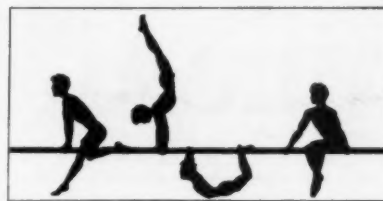
The continued use of Kayline Units for school lighting is predicated on the knowledge that their economical and highly efficient illuminating qualities cannot be surpassed.

Efficient illumination is an important factor—and Kayline Units satisfy the most exacting requirements.

**THE KAYLINE CO.**

606 Huron Road, Cleveland, Ohio

Manufacturers of Lighting Equipment Since 1895



"Gymnasium equipment by Medart" is a standard accepted nation-wide and backed by fifty-six years of specialized manufacturing experience.

A copy of the new Medart Gymnasium Apparatus Catalog, just off the press, sent free on request.

### MEDART STEEL LOCKERS

A fit companion to Medart Gymnasium Apparatus, Medart Steel Lockers are offered in a wide range of styles and sizes to meet any requirement.

Medart Steel Locker Catalog sent free on request.

**MEDART**  
Manufacturers Since 1873

Makers of Gymnasium Apparatus, Playground Equipment, Steel Lockers, Steel Cabinets and Junior Line for the Home Playground.

Fred Medart Mfg. Co. 3532 DeKalb St.,  
St. Louis



## An Applicator Bottle

furnished with our compliments in your own medicine cabinet will soon convince you that

### MERCUROCHROME—220 SOLUBLE

(dibrom-oxymercuri-fluorescein)

IS THE

### Logical Successor to Tincture of Iodine FOR

### First Aid Prophylactic and General Antiseptic Use

Mercurochrome stains as Iodin does, and it is the stain of Mercurochrome, as it is of Iodin, that shows just where and how effectively the germicide has been applied; it fixes the bactericidal agent in the field for a relatively permanent period which prolongs the asepsis or the sterilizing effect, and it provides for demonstrable penetration into the tissues beneath the superficial surfaces. Inasmuch as Mercurochrome is definitely proved an extremely efficient general antiseptic, it is only reasonable to consider it the successor to Iodin in this field, as it is free from the objectionable features of Iodin, for

**MERCUROCHROME DOES NOT IRRITATE, BURN OR INJURE TISSUE**

**SELL YOURSELVES FIRST**

**HYNSON, WESTCOTT  
& DUNNING  
BALTIMORE, MD.**

HYNSON, WESTCOTT & DUNNING,  
DEPT. N, BALTIMORE, MD.

Please send me Mercurochrome Applicator Bottle for  
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Name .....

Business Address .....

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TRADE MARK REG. U.S. PAT. OFF.

SHINE-ALL cleans and maintains all of these surfaces without injury because it is neutral and does not contain harmful abrasives, caustics, lye, etc.

Your school can save money by making this one investment that will take care of all cleaning jobs.

## THE ONE PRODUCT FOR CLEANING EVERY SURFACE

USE IT FOR CLEANING  
ALL TYPE FLOORS — PAINTED WALLS  
DESKS, FURNITURE AND WOODWORK  
BLACKBOARDS

ALL STEEL PORCELAIN AND ENAMEL SURFACES

### CORRECT CARE OF WOOD FLOORS

Our expert floor maintenance men thoroughly understand the finishing and maintenance of all types and conditions of wood floors. Make your problem theirs. One of these men will come to your school for a consultation by request. His recommendations, suggestions and demonstrations may be had without cost or obligation.

#### THE GYMNASIUM FLOOR

Special care should be given the Gym Floor. Hillyard's Special Gymnasium Floor Finish is tough and long wearing. Produces a lustrous floor surface that is easy to keep clean. Ask about it.

HILLYARD CHEMICAL COMPANY

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Flat work and cadets' apparel are "double-timed" daily into the United States Military Academy's laundry. And out again with military precision—immaculately washed, perfectly ironed, ready for service in a jiffy.

American Laundry Machinery Company engineers, who helped to install this indispensable academy laundry, will be glad to talk with you about the advantages of a laundry department in your building, under the supervision of your own officials. No obligation, of course.



Where "army routine" is applied to the laundering of flat work and wearing apparel—the dependable "American" laundry at the United States Military Academy, West Point.

THE AMERICAN LAUNDRY MACHINERY COMPANY, Norwood Station, Cincinnati, Ohio

The Canadian Laundry Machinery Co., Ltd.  
47-93 Sterling Road, Toronto 3, Ont., Canada.



Agents: British-American Laundry Machinery Co., Ltd.  
Underhill St., Camden Town, London, N.W.1, England.



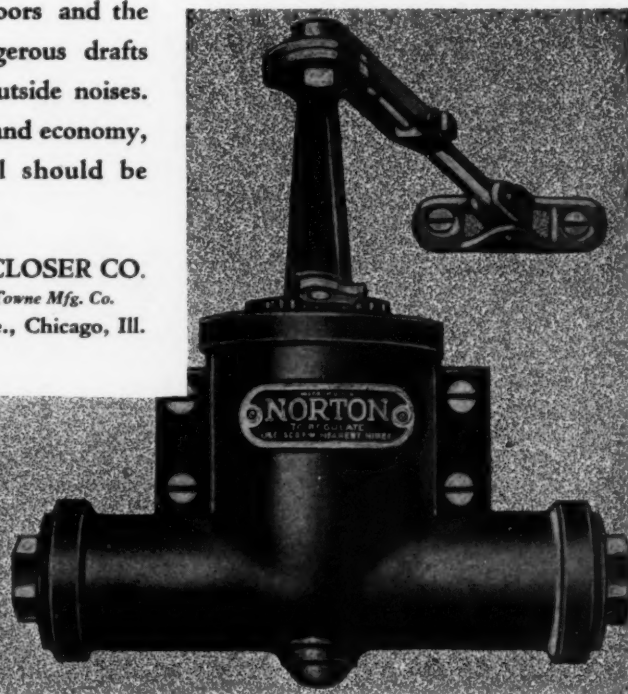
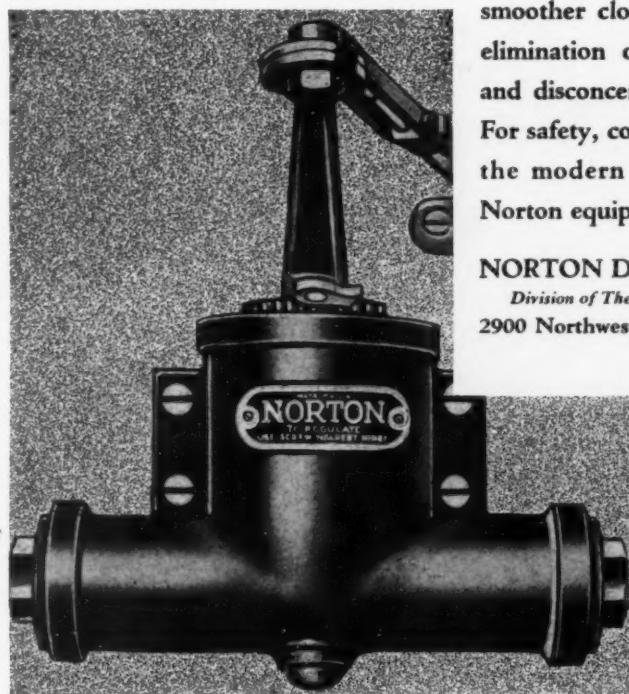
# Educational Moneys *are hard enough to get . . .*

The crying need for every possible cent that can be applied to educational uses demands that building maintenance charges be reduced to an absolute minimum.

Norton Door Closers play their part in eliminating costly and annoying operating expenses from the school budget. Once installed, Norton Door Closers give many years of dependable, trouble-free service.

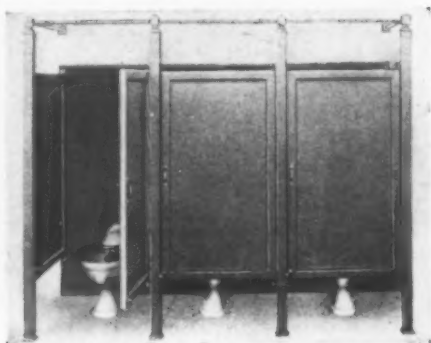
And the *controlled* action of the Norton Door Closer means smoother closing doors and the elimination of dangerous drafts and disconcerting outside noises. For safety, comfort and economy, the modern school should be Norton equipped.

NORTON DOOR CLOSER CO.  
*Division of The Yale & Towne Mfg. Co.*  
2900 Northwestern Ave., Chicago, Ill.



## NORTON DOOR CLOSERS





### EBCO STEEL PARTITIONS for Toilet Rooms

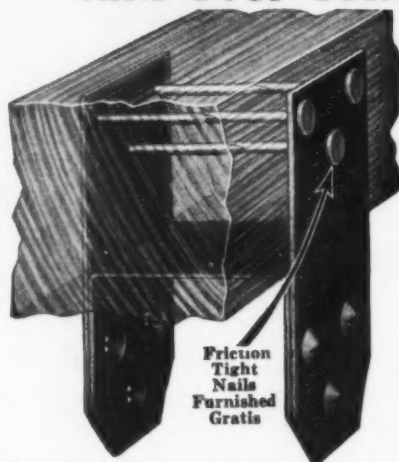
Also made for Shower and Dressing rooms, with and without doors. Being all steel, they are fire and vermin proof; have a percentage of copper to make them rust-resisting. Can be supplied in any number of units desired.

Write for Special Literature

**THE D. A. EBINGER SANITARY MFG. CO.**  
401 W. Town St. Columbus, Ohio

Manufacturers also of Ventilated Urinals, Closets, Wash Fountains and Drinking Fountains—ice and electrical.

## For Satisfactory Wood Floors laid over concrete



**THE Bull Dog Floor Clip** at work—lower cost—faster work—sounder and level floors—**ELIMINATES DRY ROT.** 25,000,000 now in use.

Complete cost data, samples, specifications and other pertinent information gladly furnished. Address **THE BULL DOG FLOOR CLIP COMPANY** 108 North First Avenue Winterset, Iowa

15 Warehouse Stocks 135 Distributors

**BULL DOG Floor Clips**  
ANCHOR WOOD FLOORS TO CONCRETE



One that would brighten your school rooms, be fireproof, sanitary, resilient and durable—which would be economical in first cost—and in maintenance.

A Marbleloid plastic flooring will answer to these specifications and can be installed over your existing floors without their removal or alteration. This feature alone will save you a lot. You can have your choice of colors, assorted patterns, etc., and your floor will be manufactured and installed by a manufacturer with 22 years of floor experience. No divided responsibility about its satisfaction.

Find out just how we can serve you—the coupon's handy.

#### THE MARBLELOID COMPANY

241 W. 34TH ST. NEW YORK  
"Terrazzo Type," "Travertine Terrazzo," "Marbleized Rubber Tile," and "Plastic Magnesite" Floorings; also Eastern Agents for "Tile-Tex" resilient floor tile.

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Send information about  
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**CLEAN FLOORS**  
at less  
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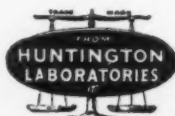
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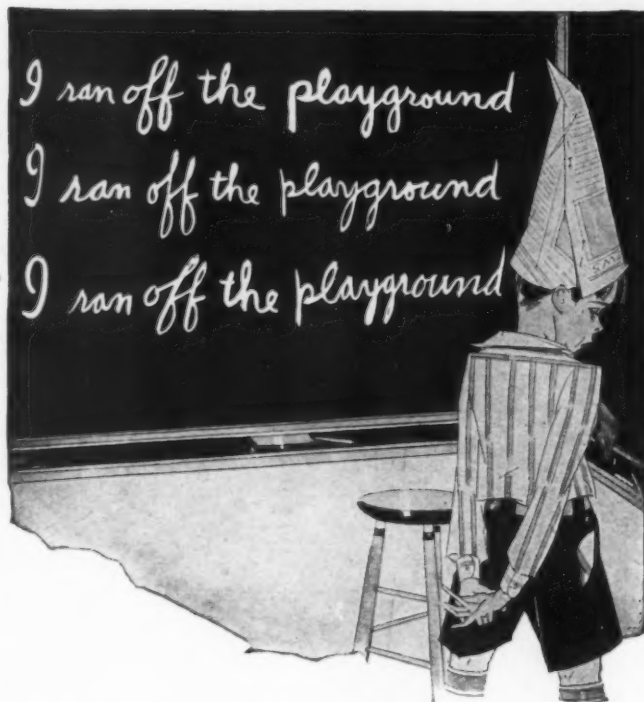
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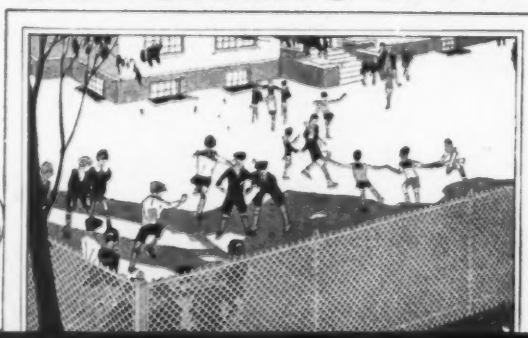
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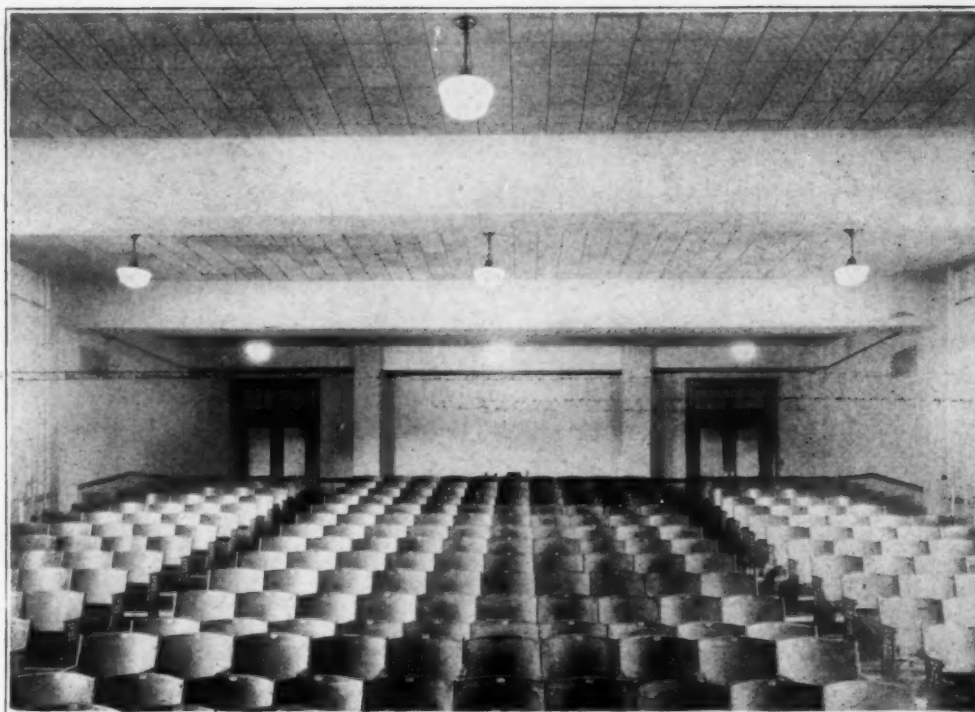
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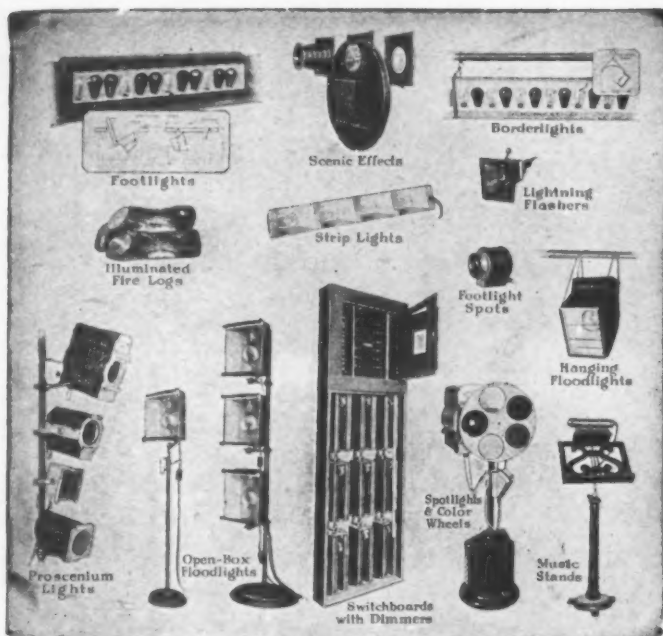
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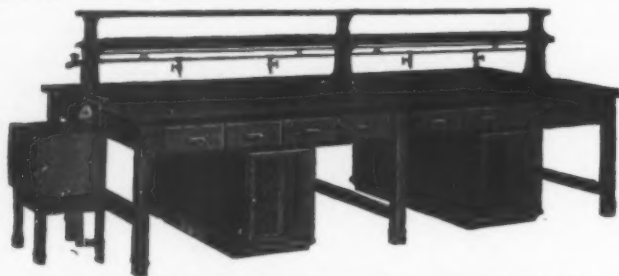
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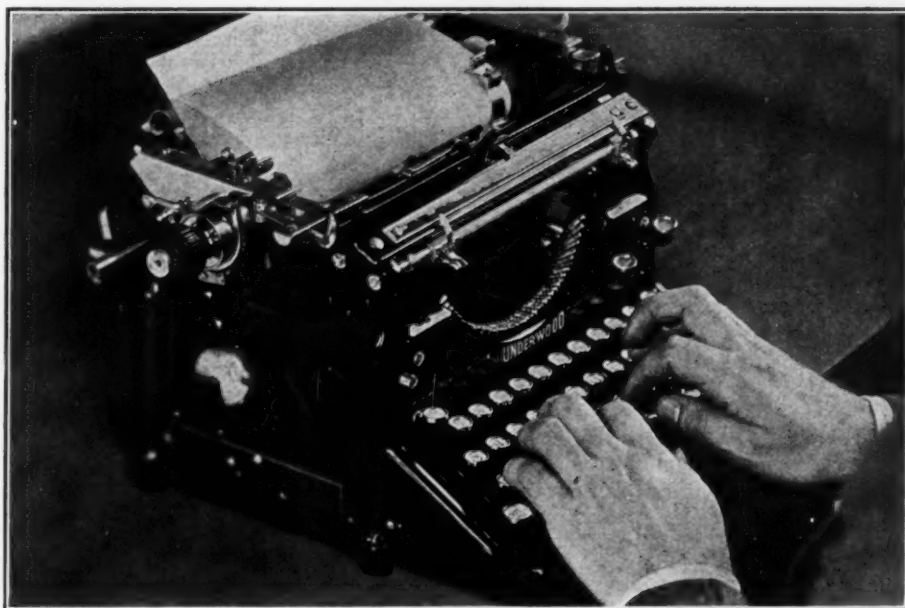
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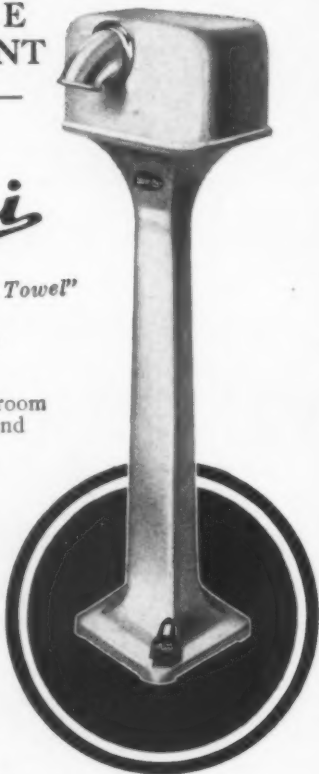
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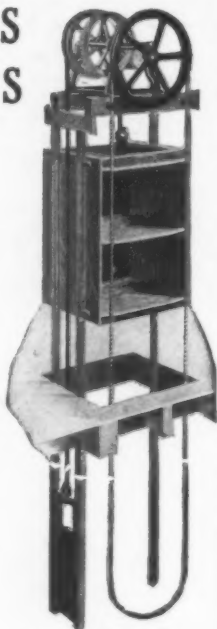
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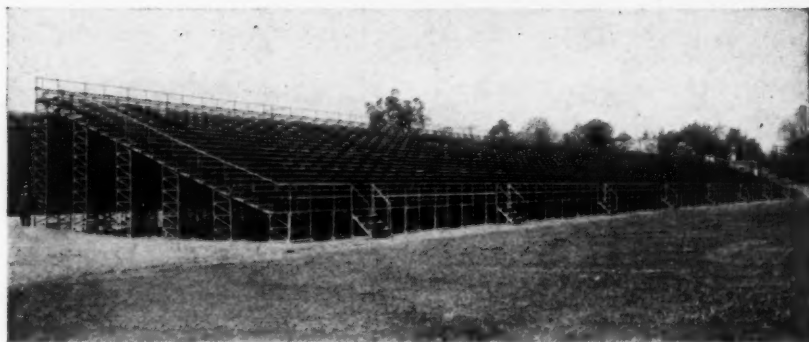
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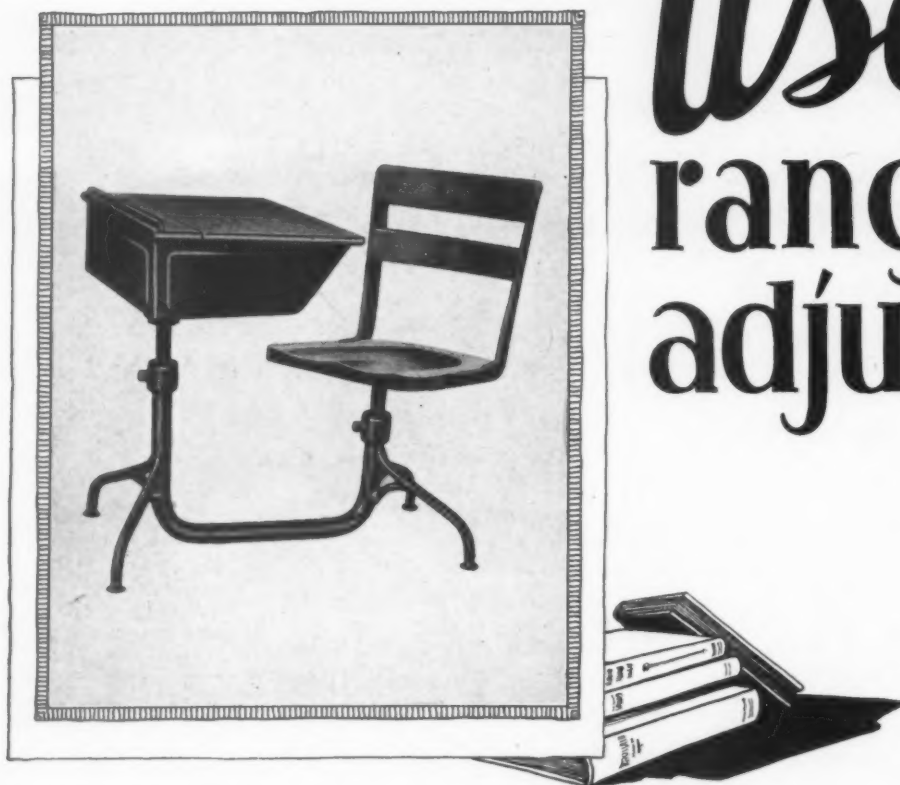
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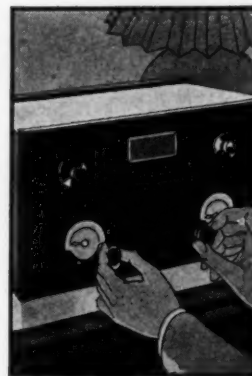
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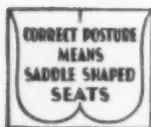




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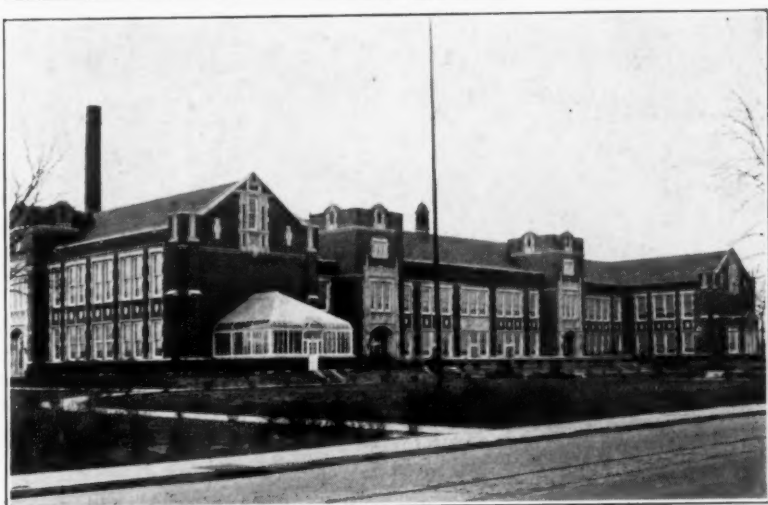
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